

Canadian Computer **Wholesaler**

THE MONTHLY FOR RESELLERS

Vol.3 No.2

High Performance Computers

Lab Test:

**Snazzy New Systems Are Pumped
For Power... and**

Speed!

**Report: Comdex/Pac Rim '97
Opportunity, And Optical Storage
PC Games Are Hot!
Getting The Lease You Need**

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Super-Large Display... Any way you look at it.

The MicroScan 17X is like getting a 21" display for the price of a 17" monitor. Its vertical viewing area in portrait mode is larger than any 17" or even 21" monitor on the market. And to make a long story short, it saves you countless hours of scrolling through oversized documents.

High-Quality Feature Set... Any way you look at it.

The MicroScan 17X has lots of other things to write home about. Like a 17" CRT display with a 16" diagonal viewing area, 1024 x 768 resolution, flicker-free 76Hz performance, .28mm dot pitch, digital and microprocessor controls, even Plug-n-Play compatibility. And it's all backed by a three-year warranty. This is a feature set you won't find in competitively priced products. And since ADI builds monitors for leading PC companies worldwide, you know you're making a quality investment for the long haul.



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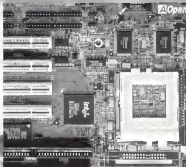
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Thought: The Ultimate Input Device?

I had my first virtual slaying adventure recently.

It was in a small computer store, and a big sign over the PC read: "The first computer product operated by human thought."

"Yeah, right," I said, and promptly stuck my finger in the little device that purportedly would read my thoughts (Of course, perhaps it read my skepticism.) In any event, the software on the screen showed me at the top of a sky hill. The instructions read to think intensely to go right, and to relax to go left. (Oh, was it the other way around?) In any event, my thoughts must have been quite a jumble, because I seemed to hurdle down in rather uncontrolled fashion.

In fact, it was quite like my real-life slaying experiences, except I didn't fall down, and suffered no bruises.

"Well," the salesperson said, "it takes some practice."

The finger device is called MindDrive, and the company is The Other 90% Technologies Inc. The company's MindDrive-supporting software includes MindSkier, FIB, MindDance, Mind Bowling, MindArt, and not surprisingly, MindGames. While the products score big on the "cool gimmick" factor, the company insists the technology is valid: The finger device reportedly measures bio-electric signals through the skin — signals which are altered by differing mental activities, such as remembering, relaxing, analyzing, positive and negative thoughts, plus left and right brain functions.

Canada's own Microforum Inc. offers a voice-controlled game called Virtual Corporation, where brave souls can fight their way up the corporate ladder — all via voice commands.

Games Are Increasingly Complex

Looking ahead, as the much-anticipated scenario of convergence between television, computing and the Internet comes into greater prominence, we will no doubt see much more intriguing game possibilities emerging. Already, the Internet is playing a big role in entertaining a segment of the population — for example, by using communication with friends and family (E-mail, voice, and video-conferencing) by providing access to interesting and often amusing data, via on-line chat areas — and indeed as a means for long-distance com-

petition, as games such as Doom and Quake are regularly played against unseen foes across the Internet.

PC Sales Gaining Prominence

We've already come a very long way from Ping. And the consumer demand is ever-increasing for functionality and sophistication in today's games. Yet, with such technologies as Windows 95 and Intel's MMX processors — hardware vendors are working towards providing powerful platforms for a new generation of PC gaming.

This issue, journalist Don McLennan examines the latest in gaming in "Shoot 'Em Up Games Still Gaming For Success," (page 22).

The official launch of MMX promises greater support for multimedia processing. See Alan Zisman's "MMX — The New Standard" (page 46) and Gaele Beaudin's "PC Preparations for '97," (page 54).

On the technology front, Toronto Editor Jeff Evans examines the optical storage market in "The Optical Storage Market: Waiting For the Millennium," (page 26), and Geoff Wheelwright updates us on the graphics/desktop publishing market in "Web Provides New Market For Graphics/DTP," (page 44). Moreover, columnist Douglas Gray gives solid advice on how to negotiate a lease for your business premises, in "What You Need to Know About Leases," (page 48).

Whether your customers are using a keyboard to surf the 'Net, a joystick to fire at strange and awful foes, stating voice commands as we take over a corporation, or gliding down the ski slopes merely through the power of our minds, readers, you're dealing with an increasingly sophisticated buying public.

Take the time to experiment with these new games and technologies. Consider signage to recommend hot new games, such as "OUR CHOICE," and be ready to talk about why certain games may appeal to you.

If today's assessment-hungry consumers start to look to you as a source of entertainment advice — that can only result in increased business opportunities, and profits, for you.

However, be careful on those virtual slopes. — G

Grace Carrothers
Editor

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What about the Penosieric?

I have just read in your December 1998 issue, the article on "Notebooks — no more barred?"

In the labour as "We CD-ROM?" the most obvious solution has been offered — the addition of a PCMCIA SCSI CD-ROM. Penosieric has been selling these for some time now, and the product has proven itself to be an excellent solution.

Also, since the article itself dealt with "feature-packed" notebook computers, I was rather surprised to see that there was no mention of the Penosieric CP-61, the world's only notebook with a built-in PO (both a CD-ROM, and a re-writable optical disk drive in one). This feature gives unlimited, non-volatile, cost-effective storage to a notebook.

As well, Penosieric also manufactures and markets a truly "ruggedized" notebook, the CP-15. In a solid magnesium case, this shock resistant, dust-resistant, water-resistant notebook can travel where few can go.

I do enjoy your publication, and look forward to such news.

*Carry Kassar
Eastern region sales manager
Computer Systems Group
Multimedia Electronics of Canada*

Which Ontario minister was that?

The article dealing with the opening of Superior's new facility in Markham, indicates that David, Timbouché, Ontario's minister of education was in attendance. Mr. Timbouché used to be Ontario's minister of social services and he was replaced, named, or kicked out, whatever way you wish to see it. John Strelchuk happens to be the minister of education in Ontario.

I don't know what Mr. Timbouché is up to lately but, from your article, he seems to be keeping up with the right company.

Come Carry Carry

*Carry Hogan
Computer Service Network
Gloucester, Ont.*

Editor's Note: David Timbouché was appointed minister of consumer and commercial relations in Ontario last August. Previously, he was minister of community and rural affairs. CCW regrets the error.

NC ready for business, not home

I think the concept of a NC is an idea that will see fruition as new business users begin the concept of computers in the workplace. However, I think the working class community and the generations of age present they represent will be the main platform for VDU's et al., for perhaps five to seven years down the road.

Will the NC be a home appliance? No way.

Once the supporting infrastructure is in place and proven to work, then we will see the home NC begin its commercial use. But not before then. Customized equipment, maybe existing bandwidth, and financial accessibility in our company will be the introduction of a network home device.

*Dan Reed
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dan@justfab.com*

CCW Bulletin Board

This feature is intended as a forum for finding and sharing information. If you are looking for something particular, why not let us publish your request? Or if you have an answer, please contact the person listed below directly, or send us your comments, at cw@top.ca.

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*Tim Ellis
Zamp Computers
zamp@telusnet*

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Thanks for your time.

*Dan Lewis
Jordan's Computer Center
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Customer looking for notebook

I represent a hole-in-the-wall based client and we are seeking help in trying to represent a reasonably priced notebook computer. It must be fairly well-built as it will be used for player registration at multi-sport and in the ball field and will be carried from one place to another.

If you could point me in the right direction it would sure help me out. We have had quotes of up to \$1,800 for used equipment, and before we pursue that option I would like to know what's available in other cities. It must be Windows-driven and be able to run MS-Works.

I am interested in purchasing a computer that would be able to run the Internet, Microsoft Office and a few others programs. It is difficult to tell which programs right now, but the computer would be a fairly dedicated one, so the need is directly to a wide range of programs would not be there. Please let me know if there is anything available on purchase (new or used) and I will take this info back to our customers for approval.

*Bryan Gaudet
Player agent
Piermont Park Little League
bryan_gaudet@telus.net*

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Corel announces 70 per cent growth in '96

On Jan. 15, Ottawa-based Corel Corp. announced its financial results for its fourth quarter and fiscal year, which ended on Nov. 30. The company's annual revenues grew from \$196.4 million in 1995 to \$334.3 million in 1996, a 70 per cent increase, year-over-year. Sales in the fourth quarter '96 were \$125.4 million, an increase of 103 per cent over sales in the fourth quarter of 1995.

Net income for this last quarter was \$6.5 million. Overall, Corel lost \$2.9 million in the course of 1996. A large part of Corel's growth can be attributed to the WordPerfect line of products. Corel is also looking to new ventures to bear fruit in 1997, with initiatives such as the Corel Office for Java, the CorelVideo Network Computer, and additional titles for its multimedia and PhotoCD lines.

Eudora has 18 million users

San Diego-based Qualcomm Inc. has announced research results indicating it currently has more than 18 million users of its Eudora Light and Eudora Pro Internet E-mail software, making the product by far the most commonly used Internet E-mail package.

The product is currently available on the Windows, Mac and Apple Newton platforms. The latest version, Eudora Pro 3.0, has introduced new features including more powerful filtering, expanded directory services, and an Extended Messaging Services API which enables third-party developers to provide plug-in applications.

Microsoft launches the Office 97 suite

On Jan. 16, Microsoft Canada announced the immediate availability of Office 97, the latest version of its productivity software suite. Microsoft founder Bill Gates made a keynote address in New York, and a 30-city promotional tour to introduce the new product began in Toronto and New York.

Microsoft claims to have some 55 million current Office users, and has received 500,000 advance orders for shrink-wrapped copies from retailers, and orders for three million pre-sold corporate licenses (mainly for use on business and government networks).

Office 97 includes new versions of Microsoft Word,

MS Excel, MS Access, PowerPoint, and Microsoft Outlook, a new desktop information manager.

Outlook "provides a powerful new system for users to manage information, track documents and communications with others. Integrating E-mail, scheduling, contact management and a personal module for tracking documents and events Outlook operates as the central 'hub' of activity for Office 97 users."

The list price for new users of Office 97 is \$699, and the upgrade price for registered users is \$394. The competitive upgrade price for users of other vendors' suites is \$349. A Developer Edition and a Small Business Edition of Office 97 are also available.



MMX flood unleashed on market-place

Intel Corp. has officially released a significant new generation of processor technology called MMX, which has been added into its Pentium and Pentium Pro CPU chip line. MMX is basically a set of 47 new instructions that enable an Intel processor to perform certain calculations much faster than an ordinary Intel chip. Most of these functions are related to "multimedia" applications: digital video, rendering, sound, voice and telephony. Some functions are speeded up by as much as eight times.

"Our new Pentium processors with MMX technology tested more than 60 per cent faster (overall) than our previous Pentium processors when compiled on the Intel Media benchmark that measures multimedia performance," according to Pam Oliver, marketing manager for Intel of Canada Ltd.

Intel began replacing its old Pentium manufacturing process with MMX production in 1996, but held the new chips back from shipment until a reasonable stock had been accumulated, in order to avoid discouraging sales of PCs due to a MMX back-order situation. On Jan. 8, the floodgates were opened, and shortly afterwards many major PC manufacturers such as Dell, Digital, Compaq and Scan Instruments announced desktop and notebook PCs with MMX Pentium chips.

For example, Toshiba of Canada Information Systems Group (ISC) announced the new Toshiba Tecra 340CDT, a full featured multimedia notebook powered by the new 166MHz Intel Pentium

MMX processor. The basic model of this system comes with a 2 GB hard drive, a 10X CD-ROM, and a 13.3-inch TFT active matrix screen. ■

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Power full Broadcast — teaching materials at teacher station to one, a group, or all student stations. Even broadcast one student's monitor screen to all other students (including audio).

Remote Observer — teachers can check students' progress by remotely observing student's monitor screen, either automatically scrolling from one student screen to another, or by manually selecting a student to observe. Moreover, teacher can reject the observe time (1-80 seconds), and can even pause on a student station and jump to control mode to provide direct assistance. Teacher can select to receive student's audio video in both.

Control — teacher can control student station's keyboard, mouse and monitor right from the teacher station. Microphone and headphone channels are opened for communication between teacher and student.

Relax — remotely reset time, a group, or all student stations. Useful for system reconfiguration, or even stopping students from playing PC games during class.

Group — automatically or manually divide student stations into groups of up to four stations per group. LED on Control Panel identifies group members. Great for language training and group projects.

Group Display — after dividing student stations into groups, allows students in groups to communicate with each other: teacher can listen and participate in any group at any time! Great feature for language training and group projects.

Student On/Off Line Indicator — LED at Control Panel will show when a student logs on or off the HiClass System.

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Sceptre signs Skyway for notebook distribution

Sceptre Technologies Inc. has signed Skyway Computer Centre Canadian distributor of its Sound's notebook line.

Skyway joins Tech Ona Canada Inc., which already carries the Sound's 4000 notebook. Skyway has been distributing Sceptre's line of monitors and LCD flat-panel displays since last spring. Sceptre says Canadian sales have tripled in that time period.

has signed



The Sound's 4000 is a 133MHz Pentium-based notebook that uses a NeoMagic single-chip 128-bit graphics accelerator, and a 2.9-volt, TCP flat-panel CPU incorporating Intel's M386C Reducem Technology and the Intel Mobile Triton System Controller chipset.

The system features a 6X CD-ROM, a 1GB hard drive, and an infrared interface for wireless transmission.

Empac is now distributing JTS Corp. hard drives

Maddison, Ont.-based Empac has announced a distribution agreement with JTS Corp., of San Jose, Calif., to distribute that company's hard drives.

JTS's hard drives include the 3.5-inch Nordic products and the 3.5-inch Palladium and Champ products. According to Empac, JTS is aggressively pursuing the development of a three-inch drive for the mobile computer market designed to offer 80 per cent greater capacity on a single platter, with substantial cost savings.



John Fung, president of Empac, (left) David L. Stern, director, North America distribution, JTS Corp.

Oasis modernizes Chinese banking

Oasis Technology, of Toronto, has installed a regional banking computer switch in China.

The Xiamen Golden Card project is a regional switch linking five banks in the city of Xiamen, China. The government-sponsored installation is one of 12 Golden Card projects designed to modernize China's banking technology to let debit cardholders access funds from any participating bank. Oasis offers an Information Switching Technology (IST) software—a Unix-based product providing routing, settlement, switching and device control between the five member banks.



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Globele's TechKnow Train roadshow took jaunt through Western Canada

More than 2,000 resellers were expected to check out Globele's TechKnow Train roadshow as it toured through Western Canada last month — making stops in Winnipeg, Edmonton, Calgary and finally Vancouver.

Summer is a good time for the Western leg of the distributor's roadshow. "It's a busy season and I think resellers like to see information. It's a good time to get ramped up for a busy season. In the summer, everyone's at a more relaxed mood."

About 30 vendors were participating in TechKnow Train, which included a mini trade show, seminars (led by Toshiba Talrix), receptions and cruise nights.

President and COO Ron Austin said his company has been hosting roadshows since

1988, but since the company "breathed" the show under the TechKnow Train logo a couple years ago people now are paying even more attention and look forward to the show. "We've been at it a long time, it's a major event of the computer industry."

"It gives us an opportunity to get in front of a lot of resellers," according to Mark Macaluso, account manager, channels, for Compaq Canada Inc., commenting on the event during the Calgary stop. "Globele does a good job of contacting and informing resellers about this show."

Michael McCann, owner of Advanced Server Corp. in Calgary, has been to a number of Globele events over the years. "They're very good. I go mainly to get product information."

Globele takes TechKnow Train to Southwestern Ontario this spring.



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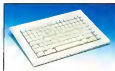
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Netcom Canada speeds Internet access

At the recent Internet World '97 show in Toronto, Internet Service Provider Netcom Canada reported great excitement by show attendees over the prospect that the company will shortly offer 56Kbps download speeds with the introduction of US Robotics' X2 technology. X2 technology is now being built into most current US Robotics modems, and can be retrofitted to many modems made over the last year or so.

With X2, users can get download speeds close to single-line ISDN speed (56Kbps versus 64Kbps), without having to go to the expense of buying an ISDN "modem" (usually at least \$300 more than a regular 28.8Kbps or 33.6Kbps modem), paying for an ISDN hookup (up to \$150, unless a free installation promo-

tion is being run by the local phone company) and higher ISDN phone service rates (usually around \$65/month).

The US Robotics X2 technology requires that the server that is downloading data be equipped to handle X2 speeds. Currently, X2 is in beta testing, for possible Canadian introduction by spring 1997.

Netcom Canada is the local branch of the U.S.-based NETCOM ISP, which, with about 600,000 subscribers worldwide, claims to be the largest ISP in the very competitive, new Internet market.

If the new high-download capability works as advertised and is introduced soon, it could at least temporarily stunt interest in other high-speed Internet offerings such as ISDN and cable modems.

Corel announces suite deal with Netscape

(NB) — Adding to what a little thunder from the formal unveiling of Microsoft Corp.'s Office software suite, Corel Corp. has announced a deal to bundle Netscape Communications Inc.'s Communicator client software in two of its suites.

Starting this spring, Communicator will be included in Corel's WordPerfect Suite 8 and its Office Professional 8 suite, officials said in a teleconference with reporters and analysts.

Chris Biber, technology evangelist at Corel, characterized the budding deal as the beginning of a "very broad strategic relationship" between his firm and Mountain View, Calif.-based Netscape. And, asked about the timing of the announcement just three days before Microsoft's official launch of Office 97, Biber said it was "certainly not accidental."

Netscape's existing World Wide Web browser, Navigator, has been included in the Corel suites since early last year. Microsoft, the largest player in the desktop suite market, offers its own browser, Internet Explorer.

Michael Cowpland, Corel's

founder and chairman, said during the conference that the move signals "the importance we place on open Internet standards and also the importance we place on the Java platform." Cowpland made much of the cross-platform capabilities provided by the Java programming language, listing his company's suites as an alternative to becoming locked in to Microsoft Windows.

However, the suites that contain Communicator will be launched initially only for Windows 95. A version for the Apple Macintosh operating system is in the works as well, officials said.

The two companies said they will be working together to integrate the Communicator software more closely with Corel's desktop products, aiming to create a suite with an emphasis on network-centric computing. This capability will be built into all new versions of WordPerfect Suite and Corel Office Professional, the companies said.

Corel also said a beta version of its Office for Java suite will be available for download from its Web site starting Tuesday, and there will be a link to this site from Netscape's site.

Telesat Canada announces price reductions

On Jan. 8, at the Internet World '97 show in Toronto, Telesat Canada announced a 40 per cent price drop to the DirecPC system (which includes a satellite dish and interface card), from \$999 to \$599.

As well, two competitive new pricing packages for the Turbo Internet satellite service were announced. The MoonSurfer plan offers unlimited 400Kbps satellite download access from 6 p.m. to 6 a.m. Monday to Friday and all day weekends for \$34.95 per month, while the SunSurfer plan allows unlimited daytime access for \$179.95.

DirecPC is a satellite Inter-

net service which is designed for businesses and schools that need an affordable, high-speed Internet connection regardless of location, and it employs Asiac satellite channels to transmit Internet data at speeds up to 400Kbps to the subscriber's PC.

Subscribers' uploaded information is conveyed via a traditional modem and land line at 22 Kbps.

According to Telesat's general manager of DirecPC, Brad Poole, "Telesat's new pricing structure will bring the power of DirecPC to many more users, from corporate IS managers to small offshore office users." ■

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	Percentage Rate		Lost Revenue (US\$)	
	1994	1995	1994	1995
Western Europe	61%	48%	\$2,741,766	\$2,576,846
Eastern Europe	85	83	1,096,012	672,999
North America	32	27	3,051,160	3,287,370
Latin America	78	78	861,223	1,141,516
Asia Pacific	58	64	3,144,478	3,801,386
Middle East and Africa	80	78	486,868	821,332
Worldwide	48	46	12,248,484	13,181,986

Voice Your Opinion! Reader Poll

Recently we asked our readers if the Network Computer (NC) would be a significant technology and market for your customers. When it came to business customers, a noteworthy 73 per cent of you responded YES. But on the home front, respondents were split equally on whether there's much opportunity for NC-type applications in the home.

Do you think the network computer will be a significant technology for business customers?

YES NO
73% 27%

Do you think the NC will be a significant technology for home customers?

YES NO
50% 50%

Global Software Piracy US\$13 Billion

(NB) — The first independent survey on losses suffered to global software piracy has put the figure at US\$13.1 billion for 1995. The survey, the first such independent

survey market information from 77 countries across six world regions. The figures were based on piracy estimates for 27 major business applications.

researcher created out on a global scale, said losses were nine per cent greater than the previous year.

The worst nation for software piracy was Vietnam, with rates running at 99 per cent. Following were El Salvador with 97 per cent, China and Oman, both at 96 per cent, and Russia at 94 per cent. Leading the world was the United States, with rates of just 26 per cent, followed by Australia at 35 per cent, the UK at 38 per cent, New Zealand at 40 per cent, and Germany at 42 per cent.

Commissioned by the Business Software Alliance and Software Publishers Association, the survey was carried out by International Planning and Research. It ac-



In North America, a contrast still remains between the United States and Canada. While its neighbor to the north reported the lowest rates of piracy for any nation, at 26 per cent, Canada was still some way behind at 44 per cent. Because of the large software market, the U.S. also had the distinction of suffering the highest losses by value for any nation, at US\$2.9 billion. The rate was a drop of five per cent on the previous year, reported 1994.

In general, worldwide piracy came in at 46 per cent in 1995, amounting just over half of all software packages installed were legal. Trouble spots continue in Eastern Europe, the Middle East and Africa, and Asia, with 21 countries having piracy rates of more than 90 per cent. ©

This Issue:

Much has been said about the Internet and its impact on software distribution. Some watchers envision a scenario where the Internet will eventually be a major means to distribute software, once electronic commerce and secure transactions are firmly entrenched, easing the process of doing business on the Web. That could see resellers playing a reduced role in the selling of software.

However, others say resellers may also find opportunity by selling via the Internet. Here at Canadian Computer Wholesaler, we're wondering what YOU think.

Our question to you:

As a reseller, which most closely reflects your view of the Internet's impact on software distribution?

- ☐ While some software may be distributed over the Internet, we believe it will have very little impact on our bottom line.
- ☐ We believe the Internet is having, or will soon have, a negative impact on our software sales.
- ☐ We believe doing business on the Internet will increase our ability to sell software.

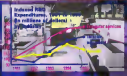
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Vancouver is often regarded as another country, both by Vancouverites and by The Rest Of Canada (TROC). Nested behind the Rocky Mountains, British Columbia's lower mainland geographically has more in common with the American West Coast than the vast, cold, mostly empty country to the east. The cultural and technological influences of the computer age have flowed north from California and Washington State (home of Microsoft), rather than west, from Toronto and Ottawa. In the last 20 years, however, British Columbia's borders have widened further — out across the Pacific to the burgeoning economies of Asia. Vancouver is now a strategic part of the Pacific Rim economy — one of the major gateways for trade between Asia and North America. Like the city-state of Singapore, Vancouver is a harbor and its strategic location have allowed it to take on an importance beyond that which its relatively small population would normally command. Consequently, a few years ago, when the Interline Group, the owner of the Comdex trade shows, was looking for a new location for a Comdex show, it chose to buy Vancouver's existing Pacific Rim computer show, and upgrade it from a local, end user's retail computer show to a higher end, regional and international business show.

The first Comdex Pacific Rim in 1995 saw significant numbers of national companies exhibiting, along with local computer retailers, and the number of attendees increased significantly, to more than 20,000. In 1996, the trend continued: more exhibitors, including more major brand name companies, and more than 25,000 attendees, including a higher proportion of computer industry professionals.

This year's PacRim '97 show drew around 35,000 visitors, an increase of over 15 per cent from last year, making it one of the largest computer shows in Canada. The 250

Vancouver Shines as Gateway To The Far East

by Jeff Evans

exhibitors included more than 80 showing Internet related products. The highlights of the show included the recent release of the Intel Pentium MMX chip, which went into widespread distribution only 12 days prior to the start of PacRim '97. The show was the first occasion for most attendees to see the new chips in action. NEC, in particular, promoted multifunction notebooks and business desktops equipped with the new MMX processors. If crowds in booths were any sign, Epson, iSTAR and US Robotics had some of the most popular exhibitors. In particular, US Robotics had its widest ever lineup of leading edge products on display, including its 56 Kbps X2 modem, a new video-phone product, 33.6Kbps Megahertz "credit card" modems, and the Pilot hand held computer.

Lenmark, which unveiled its new model 2000 printer, broke the 5000 barrier for a high resolution, high quality plain paper ink-jet. The Internet Service Providers (ISPs) were competing heavily for customers at the show, with iSTAR winning the prize for most atmospheric Internet-themed booth (complete with a steam machine that seemed about to explode). Microsoft Canada had an expanded presence at Comdex Pacific Rim this year as it headed its first Microsoft Partners' Pavilion at the Vancouver show. Among the major new Microsoft products on view were MS Office 97, the new Web-centric business applications suite and MS Windows CE, the recently launched operating system for handheld PCs. This Pacific Rim show also marked 1997 as the year in which digital video finally seems to have come of age. Fincore Graphics and Commercial Electronics, longtime distributors of PC video products such as the Miro and Fast digital video systems respectively, showed products that in their power and ease of use show that "convergence" of TV and PC is now a reality. Apple had a strong presence, with the Apple Internet Connected Bundle making its debut at the show. Apple provided the latest updates to the unfolding Mac OS story, with MacOS 7.6, and first shots on the newly announced "Rhapsody" next-generation OS, which will merge Apple and NeXT technology.

The keynote address for the first day of the show was delivered by Ross Lang, vice-

president of the Internet Software Business Unit of Digital Equipment. Lang's unit is based on the AltaVista Web search engine, which Digital originally developed as a technology demonstration, but which has grown to become one of the basic technologies for



making the World Wide Web usable. Lang made the point that in 1996, large numbers of businesses began to develop plans to use the Internet for serious business applications. Initially, companies benefited from creating corporate intranets as their new form of network. As 1997 unfolds, increasing numbers of firms will reach beyond their own corporate borders, to link with existing clients via so-called "extranets." The move to general purpose electronic commerce is coming. Lang claims, as business and society become more comfortable with the environment of the Web, and as Internet technology improves, Lang hopes that the AltaVista unit will become a practical example of how to make money on the Internet, by becoming profitable by the end of 1997.

On the second day of the show, general manager of Microsoft Canada, Jeff Dossant, gave a vision of the Network PC of the future — a far more simple and robust version of today's Windows PC, with lower cost of ownership, but still offering a full personal computer feature set.

The success of this year's show leaves a big question — if Pacific Rim continues to grow at the rate of the past few years, where will they put all the exhibitors and attendees? With careful planning, show organizers just might be able to showcase the 1998 show into the present inside and convention centre on the waterfront, but after that, they're going to need a bigger place to hold what has rapidly become a truly "world class" show. □

Jeff Evans is the Toronto Editor of *Canadian Computer Weekly*.



JEFF EVANS, EDITOR OF CANADIAN COMPUTER WEEKLY, SPEAKING AT THE PACRIM '97 SHOW.

Show yields whole crop of new products

by Grace Castellon

Vancouver's Comdex/PacRim '97 show was the launch pad for a sizable fleet of new product announcements. The many



perhaps it's just another sign that high-tech markets are picking up, and manufacturers are scrambling to meet these needs.

Wyse

Wyse Technology (Canada) Ltd. announced a series "enhanced network computers" (ENCs) and Windows-based thin clients. For example, the Winpro 4000 Series (formerly code-named "Boogie-Board"), runs off a Digital Equipment Corp. StrongARM processor, and promises to execute Java apps and also access Windows applications.

The Winpro 4000 starts at US\$139. Douglas Christie, president and CEO of Wyse Technology, based in San Jose, Calif., said he's enjoying the product to find a home in corporations and vertical markets when it starts shipping in March. The big target is the current terminal market. He said, "The idea is corporations are going to replace their PCs is foolish. There's a lot more opportunity to develop the thin client market with users of character-based terminals who are demanding GUIs and computer-based training, graphic displays and Web browsers." However, the company is also looking to sell ENCs into the home — farther down the road, Christie said. "With this clients we do think the home market is going to happen, if you look beyond the next two years."

Samsung

Samsung Electronics Canada Inc. launched a new line of SyncMaster monitors which comply to the TCO '95 standards for radiation emission and power management. The standard also places restrictions on the presence and use of heavy metals and chemicals in the products and manufacturing process. The monitor runs at 85Hz and offers a resolution of 1024 by 768 dpi.

Bill Deneweth, vice-president of marketing for Samsung, said the TCO '95 standard (which follows TCO '92), was developed by trade unions in Sweden looking to better work environments. He said certain govern-

ment departments are already starting to require TCO-compliance in their purchases.

Acer

Acer American Corp. launched the Acer Nerve E350MHz notebook, which supports MMX, and promises an average seven hours of battery life. The \$6,952 system includes a 2.0GB hard drive, a 10X CD-ROM drive, and a 12.1-inch TFT screen.

Agfa

Agfa presented the \$799 ePhoto 307 digital camera. It includes storage of 36 high-resolution or 72 standard resolution images, a 45-mm glass lens, and the Agfa PhotoWise and Adobe PhotoDeluxe software. Marketing

associate, digital imaging products, Mary Perroti expects the camera to be of interest to hobbyists and professionals such as real estate agents or anyone who "has to describe in a visual context."

Sony

Sony of Canada launched the DSC-F1 digital still camera, which includes a 1.8-inch LCD screen, built-in 4MB flash memory, and wireless infrared image trans-

mission. Sony also launched the GDM W900 24-inch display, with resolutions of up to 1920 by 1200 dpi at 36Hz. Both products are scheduled for spring availability.

NEC

NEC Computer Systems Division Canada announced

the PowerMate P2166M and PowerMate P2300M PCs based on 166MHz or 200MHz Pentium MMX processors. The systems are available in seven different configurations, with estimated street pricing ranging from \$2,719 to \$4,009.

NBC announced it would concentrate its attention on sales of corporate products, while sales of the Ready line of computers will now be handled by Packard Bell. Greg McFarlane, national marketing manager for the company, said of Packard Bell: "They have all the mechanisms to sell the consumer line." Packard Bell will now work with current Ready distributors and resellers in Canada, and the company hopes to expand channels and sales for the line.

Grace Castellon is Editor of Canadian Computer Wholesaler.

Shoot 'Em Up Games

Still Gunning For Success

by Dan McLain

Indications are, the game-buying public will keep on killing time by zipping away space aliens and other assorted cyberspace outlaws. And while the vacation of most gamers remains the same, the venue for activity appears to be shifting as the PC looks to be the dominant platform for play.

Consensus, it seems, can't get enough blood and gore when it comes to gaming, according to resellers who say interactive fighting games are expected to remain among this year's hottest selling titles.

"What we've found, in terms of the software and types of titles that seem to be moving, is that a lot of the shoot 'em up games are still big, games like *Doom* and a million other spin-offs — finally, the really gory stuff," said Ray Bucinas, spokesperson for Ingram Micro Inc. (Canada). "These have occupied a popular niche in the market for a while and it seems to be increasing."

PC Gains Prominence

The PC appears poised to become the choice platform for a majority of game players and entertainment software manufacturers. According to Backson, CD-ROM titles are gaining a huge share in the entertainment market and may dominate some day soon. "I think it's safe to say the consumer is very strongly moving towards CD-ROM technology for games. Playstation, Sega and those [systems] are still popular, but more and more manufacturers are developing products on CD-ROM platforms," he said.

"Many are doing that exclusively, and as a result, in general, sales of CD-ROM games and entertainment titles are increasing dramatically."

MMX Plays Role

Larry Waiser, president and CEO of distributor Telescope Electronics in Toronto, agreed, saying the release this year of Intel's Pentium-based MMX chip will provide an even better gaming platform for PCs, offering enhanced quality graphics capabilities. Expect to see a horde of new products based on the MMX platform, he predicted.

"[MMX] will provide the end-user with a higher performance box with better fea-

tures," he said. "I think the industry has high expectations for it... and most major manufacturers will have new products for that platform."

But, in order for the PC to dominate the game market, most agree it must become a cheaper device. That will happen, according to Waiser, as PC vendors look to penetrate even deeper into the consumer market. "I think the major manufacturers — Compaq, IBM, Apple, Packard Bell and others — are going to introduce lower priced boxes as we get through the spring and fall this year," Waiser predicted, suggesting a lower priced PC is a fully configured system costing less than \$2,000.

"We've hit a bit of a bump in the road. The consumers who wanted a computer has [already] bought one. We now have to convince that other 55 per cent of households that there's a reason to buy one. One of the sticking points is the way it's priced."

Windows 95 Games

Certainly Microsoft Canada Inc. is among those who see great gaming potential for PCs. According to marketing manager Shannon Smith, Windows 95 will experience a breakthrough this year as a gaming platform. Last year saw limited support for Windows 95 from both entertainment software manufacturers and game-playing consumers who weren't sure how games were going to perform on their Windows 95-based PCs, she explained.



"Around July or August last year you actually saw Windows 95 sales overtake DOS sales for games," Smith said. "We saw that strongly at Christmas. Most games now come out with a Windows 95 version and [there were not] as many DOS versions."

Other Trends

This year, expect more Internet-enabled games, with multiple player formats for the most popular 3D-type games. PCs are a critical platform for such play.

Entertainment/education or "edutainment" games, like cookbooks, fix-it titles and other similar teaching and self-help products could really take off in 1997, according to Buckton. These are products that offer learning through more interactive types of interfaces — combining game play with teaching.

"We're finding the edutainment-type products are increasing in sales and I think it's a result of the fact that the products themselves are much more interesting and exciting."

"The products that are coming out are just amazing and kids especially really get into them," Buckton added. "They're amazing entertainment vehicles and at the same time kids are learning how to count or write or read."

Bentecore's Wosser predicts more will be lost in 1997 as entertainment software manufacturers look for quality over quantity.

"I think the experience of 1996, in terms of [entertainment software] manufacturers has been one of quantity over quality as they tried to flood the market with a multitude of multi-media, CD-ROM titles in an attempt to gain market share and shelf space," Wosser said.

"What's happening is a tremendous amount of unsold product went back to the



Myst enthusiasts wait for the sequel, *Riven* — due in Q2



Doom — was a pioneer in modern shoot 'em up PC gaming

manufacturers. As a result, the manufacturers have learned that there has to be quality."

The PC games market will also see greater consolidation in the big game of entertainment software — Microsoft, Disney, Electronic Arts, Sierra, Virgin and Davidson — soft dominates, he said. According to Wosser, smaller companies might release one or two titles rather than the typical five or six and many of these simply won't succeed.

Those that do will likely become the acquisition targets for larger manufacturers, who will look to integrate these into their own product offerings, he said.

Input Devices

On the hardware side of things, because consumers are increasingly using their PCs for game play, gamepads and joysticks are selling like hotcakes.

"You would be surprised at the thousands of joysticks and game pads we sell every month," Buckton said. "We're starting to get into more of these types of game products just because of the demand for them."

In fact, a game pad and new type of mouse from Microsoft are pointed to being among that company's best sellers for 1997.

According to Smith, the Saturnwinder game pad, released during the Christmas holiday has been extremely popular. The unit, designed especially for those who play sports and fighting games, plugs directly into a PC's

Breaking through the games market clutter

by Rod Brown



There is a lot of clutter in the computer software market-place. As evidence, we have only to look at the endless sea of games such as software or gaming magazines

and the vast endless selections of software in the aisles of retail superstores.

It is common to spend a million or so dollars to create software, and then spend another \$3 million to \$5 million to advertise it — just to establish enough presence in the market to break through all that "other clutter." Games vendors have been increasing advertising budgets ten-fold — growing the risks of expenditures versus returns just to get channels of distribution interested in stocking their games, and getting the consumer to notice and buy them?

It's no wonder that the software industry has seen a consolidation of the big money corporate players buying up the smaller under-financed companies. As these smaller and often innovative companies make way to larger corporate entities, so does their ability to create different innovative products. In the big corporate world, there is greater job safety in producing something or continuing to a "proven formula" rather than trying something totally new.

In the coin-op video game entertainment market, we have many of these same problems and a lack of affordable innovation. There are very few manufacturers in the coin-op software business. Most of these companies are of Japanese origin — names like Sega, Capcom, SNK, Namco, Taito, and Konami dominate the industry.

The coin-op market has been lacking the kind of affordable innovation that usually comes from many smaller companies. The landscape is about to be changed dramatically by the announcement that Microsoft Corp. and Intel are entering the coin-op industry in 1997. Why would two large corporations like Microsoft and Intel

December 1996

WEEKLY BESTSELLERS LIST

GAMES

1. **Windows** — Microsoft Office 95
2. **Access Software** — Lotus 123
3. **Desktop Systems** — The Don't Know Jack XXL
4. **Activision** — Warcraft II: Tides of Darkness
5. **LucasArts** — Indiana Jones and the Temple of Doom
6. **Activision** — Warcraft II: Tides of Darkness
7. **Activision** — Warcraft II: Beyond Dark Portal
8. **Virgin Interactive** — Menapoly
9. **Virgin Interactive** — Command & Conquer
10. **Desktop Systems** — The Don't Know Jack Sports

ENTERTAINMENT

1. **Money** — My Story Activity Guide
2. **Desktop** — My Story Activity Guide
3. **Money** — Power Play: My Story Passing Time
4. **Money** — My Story Relaxed Storybook
5. **Desktop** — Winter Best Selling Four Pack

REFERENCE

1. **Pro CD Canada Phone 1996**
2. **Pro CD Faxbook 1996**
3. **Learning Company** — World's Medical Encyclopedia
4. **Pro CD Internet Directory 1996**
5. **Midcom BRAC** — Activity Collections

game port and allows a joystick to be plugged into it or the device can be daisy chained with three other Sidewinder game pads to allow up to four people to play on the same PC.

"The Sidewinder game pad also allows you to write your own macros so you can program in as different (joystick) button functions and combine those in one button move," Smith said. Beginning in January, the Sidewinder was also being bundled with Sega's Virtua Fighter for PCs.

Microsoft's IntelliMouse, released last November, features a trackball-type wheel that sits between two standard buttons. The IntelliMouse provides a range of functionality. "For example, if I'm in Word 97 and I want to move through a document, I can scroll by just rolling my mouse (trackball) wheel rather than using scroll bars," Smith said. "Or I can set it into a laptop computer mode so that if I want to have it just act up my screen as I'm mashing through a document I can have it do that as well."

"It works great with Internet Explorer 3.0," she continued. "If you're searching the Internet and want to scroll through a document or move forward and backward between pages, you can use the wheel for that as well."

IntelliMouse will be available as a single product and will be bundled with Microsoft Office Professional at a special promotional price for the first three months of 1997.

Much anticipated gaming software releases in 1997 include the next version of Myst, Eidos's latest version of Diablo, which began shipping this month is also expected to be a popular seller.

Girl Games?

The year may also see an entirely new category of games, specifically designed for female players. In a market dominated by products specifically aimed at male gamers, the unexpected success of Mattel's Barbie game may spawn offerings for an as yet untapped market.

"I saw that product last February in New York at a toy fair and said, 'this product will never fly because it just didn't make any sense,'" Wiener said. "There's no girls' market for (gaming) software and up until then the only things that had sold were sports titles or fighting games. It was a boys' market."

Barbie flashed among the top-selling game titles last year and proved that there are many new frontiers in gaming software yet to be explored.

"At the end of the day it comes down to the manufacturer bringing something different, with some urgency to it and (building a product) that's a great gaming experience," Wiener observed. "That kind of product will sell and will sell in large quantities." ■

Dan McLean is a Toronto-based journalist who specializes in high-technology reporting.

be interested in the small market of coin-op entertainment."

There are many answers and many more possibilities. For the sake of this article, I will address the issue of claims, or rather, breaking through that claim. With software companies all trying to figure out a way to both test and promote their latest software products, the coin-op market can give a manufacturer both immediate consumer feedback, and advertising through word of mouth. This is the single best type of advertising!

While the Internet is being used more and more, via manufacturers' Web sites as a means of self-promotion, one needs to remember that most savvy consumers realize that all internally generated news and reviews are greatly biased. Every game is touted as a great game, and I'm sure in the minds of all the people that created it—that's what it is. But the failure rate of game software is extremely high and very few are of "break-through" quality. Unlike the past, today's consumer is very sophisticated and savvy, and they have learned to wait for the reviews from respected magazines or a friend's advice before purchasing. But, by this time, most manufacturers have already committed to the production of thousands of CD-ROMs, floppies and cartridges, plus advertising dollars have already been allocated in magazines long before the reviews ever come out.

Additionally, the retailers are overpaying their rights to return "unsold" products at the vendor's expense. If only the salesperson at the retail store knew the game or played the game enough to recommend it!

The pace and stakes are getting higher and higher every month.

The coin-op market successfully gives manufacturers and the design teams, time to "test" their games in a real life market. The results of the testing can help the design teams to change or modify any glitches, or improve on game play where needed, before moving from the coin box, is indispensable. The cash box never lies, the coin-op market knows just how popular a game it going to be. If a game is well received, then the manufacturer can expect great word-of-mouth advertising and instant name recognition from the arcade coin-op machines, to the retail shelves. This is an advantage that Nintendo, Sega,

Capcom, and Konami have taken advantage of for years.

For instance, Sega successfully sold the Genesis System and Saturn System on the strength of its arcade hits. Sony Corp. and Namco worked together in launching the PlayStation with Namco's arcade hits Ridge Racer and Tekken.

Of course, not every game is going to be designed for the arcade type player versus the RPO game-type player who make up a lot of the home/computer market. But in those instances where arcade type play is the goal, traditional home market manufacturers should take note that the coin-op market is an excellent vehicle for the testing and launching of a new game.

Up until now, the home game designer has never been able to figure out how to make money in the coin-op market, nor was there an easy way to design and "sell" games into the coin-op market. But now, with the home computer market becoming extremely saturated, breaking out of the clutter has never been more important.

It is the smaller companies whose livelihoods and incomes depend on being innovative, who will most likely join Microsoft in the coin-op market as a way to break through. Microsoft and Intel have announced the development of a computer-based platform, and a common operating system on which most all developers are currently using or immediately further. As the coin-op market customer buys these universal computer-based game hardware systems, this installed base of hardware system will greatly increase, and so will the profitability of the manufacturers who have developed a relationship with the coin-op distributors who sell into this market. It's going to become a profitable reality very soon.

The coin-op video game market represents a direct link to the social habitus of millions of game players through the tremendous base of arcades, pinball parks, video rooms, Williams, grocery stores, bowling alleys, convenience stores, bar and taverns, and recreation centers around the world. ■

David Brown is president of coin-op game distributor, Worldwide Video Entertainment. He can be reached at WorldwideVideo@aol.com.

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The Optical Storage Market:

waiting for the millennium

by Jeff Evans

The basic storage device for most PC users is still the good old hard drive — currently either SCSI or Enhanced IDE variety with capacities of between 1GB and 5GB. Offering fast seek time (around 10ms), a cost per megabyte of data storage space of between 15 and 70 cents per megabyte and defragmenting reasonably simple and standard installation, hard drives are a commodity item that any computer reseller knows quickly how to deal with.

As the data storage requirements of both business and home PC users increase, and the critical importance of preserving archival copies of data becomes more obvious, there is a correspondingly increasing market for alternatives to a single, internally mounted hard drive. One solution is the need for extra storage, especially in a networked business computing environment, is to add clusters of hard drives on a server. Among the highest performance multiple hard drive solutions are RAID arrays. Yet, simply multiplying the number of hard drives available to a user is not a completely ideal solution. More storage in cases where instant access is not necessary, can be achieved much more cheaply compared to hard drives by alternatives means such as tapes, CD-ROMs, or cartridges.

Storage costs per megabyte for the most efficient alternatives are as little as one per cent to 10 per cent of hard drive cost. One of the categories of alternative data storage products that has seen great growth in the last five or six years is the optical storage market.



Out With The Old Media, In With The New Media

The personal computer field has seen storage media come and go. The so-called "optical" drive trademarked by Imation/Berkeley, among others, is relatively easy to install, offers compatibility with Mac and PC disk formats, and can accept either traditional floppy disks, or 234MB optical diskettes. However, the optical drive is much more expensive than a floppy drive. Optical diskettes can't be read on regular floppy drives, and the floptical format has never caught on to a wide degree. And, 234MB is not all that impressive an amount of data these days, and some early models of floptical had a reputation for unreliability. Higher capacity flopticals have been created (over 1GBMB), but the day of the floptical may well have passed. For higher-capacity alternatives are coming down close to its price point, and easily beat its cost-per-megabyte of data storage (a steep \$1/MB).

Magnetic tape is a very cheap (around a penny per megabyte) storage medium, and it has been around for many years. However, tape is a "linear" storage medium — the tape must be wound to the segment with the data the user is looking for, before it can be read — and it is only popular for making backups where seek time is not an issue. It has found its user base mainly at the high-end of the computing field, as an archiving and backup tool for large mainframe computers, network servers and workstations. It hasn't been hugely popular with the average user, and seems destined to decline as an inferior technology.

The best of the new optical storage

media, on the other hand, offer a range of price/performance features that place them in the middle ground between hard drives and tape systems. "Optical storage" refers to technologies that utilize finely controlled beams of light to read and/or write data on a storage medium. Reasonable compact disk options (CD-R), flopticals, CD-PI drives, and magneto-optical systems (MO) fall into this category. There are a variety of CD-ROM formats in existence, but in North America, the market has pretty much standardized on one 473-mb format, which is readable on any standard PC — and frequently on the Mac as well. Current CD-R disks typically have the same storage capacity as a regular read-only CD-ROM, about 650MB.

Magneto-optical media are not quite as standardized, nor as likely to be compatible. There are a variety of MO formats and two common media sizes — 3.5-inch and 5.25-inch MO storage capacities, unlike CD-R, have been increasing steadily to a current maximum of about 4 GB.

Optical storage options are useful for creating copies of very large amounts of data, such as digital video and audio, multimedia software, databases, and scanned images of printed documents. CD-R and MO both have characteristic advantages and limitations that give them a competitive edge under some circumstances and not in others.

Why Magneto Optical?

First developed by Sony in 1988 ("the result of 30 years of integrated system research"), MO technology involves magnetically changing the surface characteristics of a layer of

signals so that the difference can be detected, and data read, by a laser light. Magneto-Optical technology enjoys a couple of advantages over CD-ROM. For one thing, cartridges are erasable and re-erasable, allowing the user to delete unwanted data and write new data onto the disk. MO drives are sold by a few manufacturers to a wide range of OEMs, who package them with driver software and interface cards and cables. For the business/network market, various OEM vendors sell patchbox MO systems that can hold and access dozens of cartridges.

For the home PC user, MO drives are competitively priced with CD-R drives, and are relatively easy to install. MO technology has rapidly gained wide acceptance, and new generations of higher capacity MO cartridges are being introduced regularly. New MO cartridge formats are typically backward-compatible with the two previous generations of cartridges, according to a Hewlett-Packard representative, and as upgrading from older to newer MO systems is easy, MO can expect to experience serious competition from Digital Video Disk CDs when records for DVD become available, in several years.

Generally, to reuse an MO cartridge, the user has to go through an erase cycle and then a copy cycle. Hewlett recently announced a quick-erase disk format that speeds up erasing considerably. An additional advantage of MO is durability: the recording surface is sealed into a well-protected 'clean' casing. Sony guarantees the data storage capability of its cartridges for 50 years.

On the down side, MO cartridges can be relatively expensive—about \$95 for a blank 4-GB disk, considerably more than the cost of a backup tape or a blank CD-R disk (a little over two cents/MB). Also, magneto-optical drives, which are required to read the disks as well as write them, are still not all that common. If you want to give it the continued on an MO disk to some other PC user, the odds are that you'll have to copy it off of the MO disk onto your computer hard drive, and find some other way (via network, Internet, compressed file on multiple floppies, or recordable CD) to transmit it to the other person's computer.

Of course, where the end-user is employing the MO drive only as a personal backup system for his or her PC, or if the MO disks are accessible from a disk library or 'jukebox' on a network, the lack of pervasive erasable form of MO drives is not a problem. If the Japanese market is any example, sales of MO drives could blossom quickly: in 1997 and 1998, for 1993, the first year MO drives started to take off, sales were 110,000 units

in 1994 = 364,000, in 1995 = 475,000, and in 1996, nearly 500,000. Fujitsu accounted for 51 per cent of MO drive sales. The other major players internationally are IBM, Matsushita, and Sony, plus OEM systems makers like HP.

Why CD-R?

The main benefit of Compact Disc-Recordable systems is that they produce an end product in CD-R which is widely compatible and easily distributable. Most mainstream customer-capable PCs have a CD-ROM reader that will read a CD-R disk. The blank CD-R disks are cheap — as little as \$12, for 60MB. Here we see the synergistic effect of several trends coming together: pervasiveness of CD-ROM drives on PCs, economies of scale as CD-R caught on, resulting in lower drive costs, and standardization on one format. These trends have combined to make CD-R very popular, especially for individual PC users. With CD-R, you can 'publish' your own personal CD-ROMs and distribute them to almost any other computer user. None of the other optical media offer the same capability to the same degree.



CD-R prices are dropping constantly and rapidly. The street price for an internal CD-R kit has fallen as low as \$725 recently. If prices continue to drop to the \$500 range, CD-R might well push other technologies out of the space, at least until recordable DVD becomes available.

Downside to CD-R include other truly installation procedures, the fragility of the CD-R disks, and the inability to erase files and re-use the CD-R disk. Also, there is a strong suspicion by many industry experts that, while regular CD-ROM disks will be readable on the next generation of DVD CD readers, erasing CD-R disks will not be readable, barring some major work-around.

Why CD/PD?

The newest kid on the optical storage block is the CD/PD Phase Change Dual Recorder drive. This is an intriguing system composed of a recording device that employs phase change technology to make 650MB disks that

can be read on any PD reader, while the drive also has the capacity to read regular CD-ROM disks.

So, for under \$1,000 you get a first-rate optical storage recorder and a device (4X or 8X) CD-ROM reader. Blank PD disks cost about \$20 for a 650MB re-writable disk (about 6 cents/MB). The PD disk works by focusing a laser beam onto microscopic 'islands' on a disk surface, and creating changes in the reflectivity that the laser can detect, and interpret as data. As well, the software developed for the CD-PD drives is first rate and easy to use.

The downside, of course, is that this is yet another 'standby' which may or may not be around for awhile.

Markets For Optical Storage

The market for optical storage solutions can be divided into two typical segments. First, there is the corporate market, which makes large-scale use of MO for archiving (especially of scanned documents), and which most frequently relies on the network to give users access to CD or MO archives, rather than giving each end user an MO drive on his or her PC.

The other MO market is the SOHO (Small Office/Home Office) market, where the CD-R or MO drive is attached to an end-user's machine. The corporate market is primarily served by VARS. Hewlett, Packard has hundreds of MO library VARs in North America and 'horizon' in Canada, according to HP representatives, while the SOHO optical market is handled by retail operations that have chosen to carry CD-R or MO drives and materials as part of the product line.

Pricing Trends

For both markets and end-users, one of the reasons that sales of optical storage devices for the individual PC user have been slow to jump as quickly has been a rapid downward trend in price. End-users can rent CD-R systems for less than \$50 per day, or lease CD-R applications drive for under \$20 per disk.

Street prices on CD-R kits in Toronto at the end of 1996 ranged from \$725 for a Sony 954s (4X), to \$745 for a Smart II. Friendly two-speed writer kit, through \$779 for a JVC XG-W2040, \$852 for a Panasonic Micro RCT-5840A, \$885 for a HP 6028A \$1,069 for a HP 4020i, and \$1,090 for a Yamaha 4X CD-R kit. Blank CD-R Drives from RW40, Bush and TEAC are in the \$9 to \$10 range.

The Major Players

There are several major suppliers of CD-R and MO systems active in the Canadian

market, including Hewlett-Packard, Mitsumi, and Pioneer. Mitsumi, Hewlett-Packard is notable for being a supplier of both CD-R and MO systems (it manufactures CD-R systems through a subsidiary it acquired a couple of years ago, and is an OEM customer of a manufacturer of MO drives).

DynTek, a Canadian company, has recently introduced the DynTek PCD650, a dual-function rewritable PCD-ROM system with a suggested list price of \$995 US. The company also has a high-speed 4X CD-R system aimed at the corporate market, the CD6400, which has a suggested retail price of US\$1,695.

PVC produces a line of CD-ROM library systems, including the MC-1300 (200 disks), and the MC-1600 (600 disks). The company also makes a Personal Archiver Plus CD-R system, and recently announced some signature utility software — the PVC Extensible Software, which utilizes "Variable Packet Writing" to enable drives recording to a CD-R disk, as though the CD-R drive was just like any other removable storage device.

Pipitone has been one of the most aggressive entrants in MO in the Canadian market, with a series of well-engineered, easy-to-use, well-supported MO products. In mid-1996, Pipitone Canada announced the world's first 3.5-inch 640MB MO drive, nearly tripling the capacity of earlier MO drives.

Pipitone MO drive introduction



Hewlett-Packard was interested enough in the potential of CD-R to acquire another company that had developed some promising, low-cost CD-R technology, and actively develop and market a line of CD-R systems. The HP SureStore CD-Writer is pretty much the standard in price/performance by which all the other CD-R systems on the Canadian market are judged. They come with a complete software suite, compatible with Windows 3.1, Windows 95 and Windows For Workgroups. HP announced three new CD-R solutions in December 1996: the 6X family including the SureStore CD-Writer 6020 as external unit, the CD-Writer 6020s, an internal SCSI version, and the CD-Writer 6020p, an internal parallel port version, with particular applications to

notebook computer users who need a transportable CD-R system.

HP also has a hand in virtually every other mass storage technology, optical or otherwise. Its CD-ROM and MO jackets are the dominant choice in the corporate data archiving and library markets. According to a Hewlett-Packard rep, the company will be watching the progress of DVD technology closely, and can be expected to offer DVD solutions when the technology and the market are ready.

Mitsumi (another in Panasonic subsidiary and parent) makes the CD-ROM and Optical 2 in 1 PD drive, which combines in the same mechanism the ability to read and write 480MB PD disks, and to read Audio CD, CD-R (read only), Kodak Photo-CD and CD-ROM disk formats. The drive is available in both external half-height and external models, with simple plug-and-play installation. Blank PD disks are sold by a variety of vendors, including Pioneer.

Mitsumi Electronics, the world's largest producer of PC peripherals, is one of the principal manufacturers of CD-ROM readers, having manufactured seven million of them in 1995. The company has recently unveiled its first CD-R drive, a leading-edge product called the C-360TE 2X/4X CD-R. This is the first CD-R drive to feature the new Enhanced IDE (ATAPI) CD-R libraries. Originally released at the Fall 1996 Comdex show, the product is designed to be extremely user-friendly and simple to install on a Windows 95 PC. The drive can write at 2X speed, or 300 KB/sec, with a very low error rate. The drive can also be used to read data from CD-R or regular CD-ROM disks at a 6X rate, or 900 KB/sec. "As the leading manufacturer of CD-ROM drives, Mitsumi has taken all its expertise in developing high-quality, easy-to-use, affordable products and applied that knowledge to the CD-R drive market," according to a Mitsumi rep. "Customers told us that CD-R drives were too hard to set up, so Mitsumi designed a CD-R drive with an ATAPI interface. Customers also told us that many CD-R drives are too slow, so we made the C-360TE fast enough to double satisfactorily for a CD-ROM drive." The suggested list price of the C-360TE is US\$599.

Mitsubishi makes a 3.5-inch half-height MO drive that can accommodate 25GB, 1.3GB and 680MB media.

Pioneer Music offers a wide range of MO products, including the Tahoe 250.

NBC has announced its own PDCD drive — the CDX851-031 (product code, CP-220-PD-SCSI), SCSI-2/ EIDE (ATAPI)

based dual recorder/reader. NEC, which was a major player in the high performance CD-ROM reader market, has recently found itself being pushed out of the CD-ROM market as a product gap put pieces through the floor.

Pioneer debuted nine new optical storage products at Comdex/Fall in Las Vegas, including three new CD-ROM libraries (120, 240, and 480 disks). The new CD-ROM library models supplement Pioneer's existing M-Series MO jacket line. The company also released three new CD-R libraries, which offer CD recording capabilities over a network, and three PDCD libraries, which offer combined PD rewritable disks with 6X



CD-ROM reader capabilities. Pioneer lists the new rewritable library models' range from about US\$10,000 to US\$18,000, and up. A library system is essentially a large casing that holds up to 480 disks, with rewritable transceiver ports that select a disk according to a user's request, and send the disk's information over a network to one or more users.



Pioneer also has a PDCD drive, plus what it claims is the fastest MO drive on the market — the 2-4GB DW360. The DW360 is a half-height 3.5-inch drive, which employs Light Intensity Modulation Direct Overwrite (LIMDOX) technology to write data in a single pass of the disk, rather than two passes. The DW360 is fully compatible with existing MO disks, including 2-4GB WORM and LIMDOX disks, and earlier LOGIC, 1.3GB, 450 MB and 680MB formats. Suggested list price for the DW360 is US\$1,995 (normal) and US\$1,695 (promotional). Pioneer also recently introduced faster direct overwrite

2.4GB MD Libraries

Head manufactures an external 170GB ES-3460 optical drive with "Mobility" formatting software from Apacore, for greater compatibility.

2000 AD: The Coming Of Recordable DVD

The biggest revolution in software publishing and distribution over the next couple of years is likely to be the advent of Digital Video Disk format on a large scale. This format, which can store between 4.9GB and 14GB on a 4.75-inch CD, is likely to build slowly at first. There will be a need for opposing software (such as movies) to appear in this format to spur sales, and one key bit of hardware — MPEG II decoding devices, will have to become cheap enough so as not to inhibit sales. For DVD to become a viable mass storage technology for backing up or archiving the contents of a hard drive, low-cost recordable DVD (DVD-R) will have to become available. Depending on where you talk to, if low-cost DVD-R is even practical, it is likely anywhere from three to seven years off. However, almost every manufacturer and dealer COW talked to, believes that if DVD-

R does come, it might stand the best chance to become the standard for optical storage after the year 2000.

Buyer and Seller Beware

Like many other areas of computer technology, the pace of change in the optical storage market is so fast that both retailers and end-users are constantly at risk of getting stuck with an incompatible, non-upgradeable, unsupported technology. No optical storage product should ever be represented as anything but a temporary solution, just as the 3.5-inch floppy was.

Profit margins on individual PC optical storage drives are likely to decline as a few popular types become mass-produced and widely used and "commodification" sets in. There will always be larger margins in selling high-and-special packages to corporate network customers, but these customers are fewer in number and require the retailer to acquire higher technical skills and endure longer sales cycles. ■

Jeff Emsen is Toronto Editor for Canadian Computer Weekender. He can be reached at jef@compcon.com

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High Performance Computers



Lab Test: Sneaky New Systems Are Pumped for Power... and Speed!

by Jeff Bucci, Tim Bingham-Walke and Steve Halvick

More and more power is being bestowed upon computer users, at a rapidly increasing pace. So much so, we are witnessing the emergence of a new breed of computing machine. Their next new kid on the PC block is the high-performance PC. These all-in-one power houses have the word "speed" written all over them — and for good reason. They're boasting ultra fast processors, turbo-charged video, complex audio/midi capabilities, speedy CD-ROMs, really fast hard drives and they're communication-savvy.

In mid-1996, Intel introduced the 300MHz Pentium processor. Since then, its price has dropped down to the "affordable by many" level. As the cost of the 300MHz processor decreases, more and more people are purchasing both systems including both the processor and its complementary high-performance components as well.

Today's High Performance PC

So what really makes up a high performance PC?

It begins with the processor, a top-of-the-line 300MHz Pentium or Pentium Pro. Then add an impressive amount of RAM, somewhere in the neighborhood of 32MB to 64MB, and a quick hard drive — one that maximizes the data transfer rate between your drive and the CPU. (For example, an IDE drive with specifications something like the following: a spin rate of at least 3,600 RPM, a transfer rate of about 2,900 and an access time of less than 11ms.) Throw in a VRAM or VRAM quality video card, and top that off with a 33.6Kbps, speedy modem system and a CD-ROM.

With all this talk of PIII's, let's not forget the P130 and P166 processors. The P233 is approximately 12 per cent faster than a P166 and costs about \$150 to \$200 more. A 12 per cent speed boost for Windows NT Server 4.0 is much welcomed by many network professionals — thus justifying a P233 based system. Otherwise, a 12 per cent increase really isn't all that attractive (versus a P166 based workstation) for the average home or office user.

The Dilemma

Do you hear this question? "Should I buy a Pentium Pro or wait for a even faster processor?"

This dilemma will always remain. Of course, the buyer must be willing to put out the extra amount and justify the expense. For the speed demons, there is yet an even faster processor — the DEC Alpha runs at a clock speed of 334MHz. But be prepared to write your own code, at least for now.

For most buyers, the choice is made by the competition between software developers and hardware manufacturers. This is a symbiotic relationship. If you customers haven't realized yet, Windows 95 is the next "DOS" — in the sense that if they haven't made the switch to Windows 95 — they will. When customers do upgrade, first probability that they will also purchase a Pentium-based system is very high, simply because Windows 95 is optimally designed for a Pentium-based system. Consequently, both Microsoft and Intel will add another coin to their gold pots. Furthermore, many software packages and upgrades are only being offered for the Windows 95 platform.

What Is The Market?

So what does all this power do, and who can benefit from it? No doubt the performance PCs described above represent serious computing power and are probably geared more toward the power user, the multi-

No doubt these performance PCs represent serious computing power,
and are geared towards the power user,
the multimedia professional and for business use.

multimedia professional and for business use. For the power user, such a system in most cases becomes another toy to learn from.

For producers of multimedia content, such a system satisfies the need for raw power and speed required by graphics design and audio/video editing. But perhaps the best-suited environment for this class of machines is a commercial application. Such systems are proving ideal as network file servers and now more than ever — Internet servers.

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FIGURE 12.18 *Staphylococcus aureus* produces a variety of toxins.

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Table 1 *Regression coefficients* (N = 1,000) (continued)

Figure 1

Unit 4, 1200 Commercial Place, Richmond, B.C. Canada V6V 2C9

The following table shows the results of the regression analysis for the dependent variable "Number of children in the household" (N = 1,000).

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DOI: 10.1002/for

March 13-19, 1997, Hannover
 March 19-22, 1997, Bonn

10000 Feet Per Hour, Head 11.

QDI

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3-D Micro IPC

Suggested Retail Price: \$2,999

Reseller Authorization

3D Micro sells only to authorized resellers.

Marketing Support for Resellers:

Coin-op advertising and marketing funds
Reseller referrals and 1-800 toll-free to resellers
POP displays

Maintenance And Technical Relationship With Resellers

Three-year warranty includes parts and labor.
Optional extended warranty
Road for training seminars
Dedicated technical RMS
Dealer-specific space on Web site
Web site includes technical information and drivers

Channel E-mail/info@3d-micro.com

Market Positioning

"We configure our system as a high-end business multimedia workstation, said a 3D Micro spokesperson.

Editor's Notes:

IPC computers have been known to have some little quiplets which tend to be an easy sell to most customers. An example is the internal ISA audio receiver, complete with software. This month's system contains fairly common components, such as a video card from ATI and a 1.6GB hard drive from Fujitsu. Most customers will probably want to upgrade the amount of RAM on the video card to 2MB, especially considering the small price difference. Popular software titles like Microsoft Internet 96, Gold, Dangerous Creatures, Words and Money are also included. For game buffs, Virtua Fighter from Sega will be an added bonus. The system's performance was lacking, due mostly to the combination of the 1MB video and slower hard drive.



Advance Interface Express Micro P106

Suggested Retail Price: \$3,799

Reseller Authorization

Reseller candidates cannot be geographically located near existing authorized dealers. Authorization is at the discretion of the company.

Marketing Support:

National end-user advertising
Dealer referral program
Local product shows
Marketing materials
POP display
Product training

Maintenance And Technical Relationship

Optional on-site service is available
1-800 toll-free technical support
Product information on Web site
A three-year warranty is available for both resellers and end-users across Canada

Website Discussion:

On a per-order basis.

How Of The Market:

"Multimedia is becoming the trend in PC market. More than 50 per cent of our desktop systems are MPC equipped."

Editor's Notes:

This system drops Express Micro was the fastest Pentium we've ever tested. Included in the machine are nothing but first-rate components, such as a Matrox Millennium video card with 4MB on board, plus the MPEG 3D hardware add-on. The Quantum 4.5GB Atlas uses an Ultra Wide SCSI interface, and is connected through Adaptec's 2940UW controller. Multimedia accessories include the latest Sound Blaster AW164 from Creative Labs and a five-disk IDE changer from Panasonic. A truly exceptional system, and a definite winner.



HP Vectra 580

Suggested Retail Price: \$4,495

Reseller Authorization

Resellers are authorized through HP's national distributors.

Market Positioning:

"The HP Vectra 580 with a 200MHz Intel Pentium is positioned for the small business owner/operator that needs high-speed, reliable computing power as well as top-notch support. Although designed specifically for small businesses that have little or no MIS staff internally, the Vectra 580 provides all of the features that small companies need to function like large corporations," according to HP's website.

Editor's Notes:

HP's evaluation system this month was Reseller Vectra 580 series.

Our test unit came equipped with a Matrox Millennium video card containing 2MB of SDRAM, and a 2.5GB Quantum hard drive, which definitely aids in the overall system performance. Multimedia components include a Sound Blaster 16 sound card, and an IDE CD-ROM drive. A feature very rare among many systems is the included MS Office Professional CD-ROM. This is great package, and backed by one of the industry's giants with a three-year warranty.



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Compaq CPT240C-200**Suggested Retail Price:**\$4,535**Street Price:**\$4,535**Retailer Authorization**

Retailers can't be nearby to an existing authorized reseller.

Marketing Support For Resellers:

Co-op advertising

Retailer rebates

Marketing materials: like brochures and a wordy copier.

Maintenance And Technical Relationship With Resellers:

Three-year warranty includes parts and labor

Resellers receive technical updates

Volume Discounts Available:**Demo Unit Availability And Restrictions:**

There is a 10 per cent discount on demo unit pricing

Channel E-mail:

compaq_bc@compaq.com

Market Positioning:

"This product is ideal for users looking for high-performance multimedia systems at home or at work," said Alan Ng, at Compaq. "It also targets markets in desktop publishing and CAD due to its extremely good performance in 3-D graphics environment."

Editors' Notes:

Making up the system are high-grade components like a 4MB Matrox Millennium video card, a 4.5GB Ultra Wide SCSI hard drive from Seagate, 32MB of EDO RAM and 512KB of pipeline cache. The operating system which ships with the machine was Windows NT 4.0, but we had to run our tests under Windows 95, in order to remain consistent and fair to the other competitors. This fine system managed to place second fastest in this survey. A high-performance system, definitely worth considering.

**Datcom****Suggested Retail Price:**\$2,630**Street Price:**\$2,190**Retailer Price:**\$2,190**Marketing Support For Resellers:**

National advertising

Maintenance And Technical Relationship With Resellers:

One-year warranty includes parts and labor

Web site includes technical information and drivers

Demo Unit Availability And Restrictions:

Demo units are available with three days return. Any customer configuration is possible and a deposit is required.

System Strengths:

Datcom said: "We emphasize fast delivery, quality control and fast RMA turn around time. We aim to support small- to medium-sized

resellers who want prompt services and direct support.

Editors' Notes:

Datcom computers are well known around our labs as the ones with all the right stuff, at a great price. The unit consists of components which customers will find very attractive. For example, video is produced by a Matrox Millennium accelerator with 2MB of dual-ported VRAM on-board. Storage comes in the form of a 2.5GB drive from Western Digital. Multimedia components include a Sound Blaster 32 sound card, a Panasonic 13X CD-ROM drive and a USB 28Kbps fax modem.

**Empire Access****Suggested Retail Price:**\$2,190**Street Price:**\$2,099**Retailer Price:**\$1,899**Marketing Support:**

Retailer rebates

National advertising

Maintenance And Technical Warranty:

Two-year warranty includes parts and labor

1-800 tech support for resellers

Dedicated technical BBS

Web site includes technical information and drivers

Volume Discounts: Yes**Demo Unit Availability:**

Subject to restrictions, with site per dealer

System Strengths:

Staff: Impact v. Susan Liu "It's a customized system with good

tech support and excellent warranty service."

Editors' Notes:

The Access series, while fairly new to our Lab Test have managed to surpass us every now and then. The configuration includes a Pentium 386MHz processor, 512KB of pipeline burst cache, and 32MB of SDRAM. One unique feature was the Diamond Stealth video card with 2MB of EDO RAM. Systems equipped with these cards tend to score high marks in the area of our benchmarks — which deal with graphics-intensive applications. Also included were a 2.5GB drive from Seagate, a 38Kbps fax modem and a 12X CD-ROM drive from Panasonic. This machine managed to achieve an impressive score of 159 on our benchmark suite.



Darius Discovery

Suggested Retail Price: \$2,928**Street Price:** \$2,888**Reseller Price:** \$2,450**Warranty:**

Optional two- or three-year warranty.

Marketing Support For Resellers:

Co-op advertising.

Reseller referrals and system brochures.

Maintenance And Technical Relationship With Reseller:

Sixty-day DDM is pre-paid both ways, with shipping on defective systems. The company cross-ships components (for example, video card, hard drive and floppy drive) occasionally for resellers so that they can also replace the defective components, saving down time for their customers.

Volume Discounts:

Volume discounts are available for resellers who are dealing with purchase plus orders for educational institutions or corporate employees.

Demo Unit Availability And Restrictions:

Demo units can be purchased at a slightly lower price than the retail price on systems. The company is implementing a program for resellers to purchase one demo system from selected system configurations every three months.

E-mail: darius@dmcc.com**Market Positioning:**

"We feel strongly that multi-media-based computer systems will be a standard, at 90 per cent of the systems we are shipping, now are equipped with CD-ROM, sound card, speakers and modem. With the focus from Intel on MMX and DVD standardization, multimedia systems will become a "MUST" for system distributors when they configure any computer system bundle," said Jennifer Chan, of Darius. "We will follow the demand from our resellers. For example, we currently offer 13X CD-ROM as an upgrade from 8X and DVD will be available as an option in March."

For example, we currently offer 13X CD-ROM as an upgrade from 8X and DVD will be available as an option in March."

Editor's Notes:

This system from Darius features a Diamond Stealth 3-D 33-40 video card with 4MB of EDO RAM onboard, a Sound Blaster 16 from Creative Labs, a 1.7GB hard drive from Fujitsu and a 33.6Kbps modem from USR, which can be upgraded to X2 technology when available. Also included in the package is a pair of speakers from Yamaha and an SX CD-ROM drive by Sony. The popular Corel WordPerfect Suite is also bundled, with the option of choosing Lotus SmartSuite 95 at an additional charge. Overall system performance was good, with a score of 851 on our RAPSco benchmark.



IBM S78

Suggested Retail Price: \$4,999**Marketing Support For Resellers:**

Co-op advertising.

Reseller referrals.

1-800 tie-in to resellers.

POP displays.

Maintenance And Technical Relationship With Reseller:

Three-year warranty includes parts and labor for one year.

Reseller training seminars.

1-800 tech support for resellers.

Dedicated technical BBS.

Web site includes technical information and drivers.

Volume Discounts: No.**Demo Unit Availability And Restrictions:**

Usually 90 days.

System Strengths:

According to an IBM spokesperson, the Aptiva is set apart through "High performance, multi-system design; media console and distinctive monitor stand; Total Image Video offering full screen action; stereo sound with CD-quality 3-D Qsound; total communications, including Ring Central Software, a 33.6Kbps modem, Wake Up On Ring, cordless mouse; jynicks; Internet Connection Probe; and the 'Super Offer' (which allows users to choose one of five value-add options)."

Editor's Notes:

It's basic, it's sleek, and it's new from IBM. Part of the new "S" series, this model S78 is a good example of "computer renovation." The entire system is composed of three main pieces — the monitor, media console, and the tower case. The design allows the user to place the monitor and media console on the desk, and to conveniently hide the tower case under the desk.

The media console houses the CD-ROM and floppy drives, which saves the user from having to crawl around under the desk to reach disks. The S78 uses ATI's new 3-D Rage chipset on a 2MB video card, and IBM's own 3.2GB hard drive which is both fast and contains plenty of storage space. The combination of a 33.6Kbps fax modem and 16-bit sound is achieved using IBM's MWave card.

The package contains many popular software titles, including Microsoft Encarta 96, Lotus SmartSuite 96, Quaker SE MechWarrior 3 designed for the 3-D Rage chipset, VR Soccer, TryMaker 1996 SE, and others aimed at younger children, in the entertainment category. To help delight those Mech in a high-quality jynicks with better games, and a cordless mouse.





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High Performance Computers



	Compaq	Dell	Datcom Discovery	Datcom P300	Empire Arena
Processor	Pentium 200MHz	Pentium 200MHz	Pentium 200MHz	Pentium 200MHz	Pentium 200MHz
Cache Size	512KB pipeline	256KB pipeline	512KB pipeline	512KB pipeline	512KB pipeline
RAM	32MB EDO	32MB EDO	32MB EDO	32MB EDO	32MB SDRAM
Video Card	Matrox Millennium	Matrox Millennium	Diamond Stealth 3D	All In Wonder	Diamond Stealth 3D
Video Memory	4MB VRAM	3MB VRAM	4MB EDO	2MB DRAM	3MB EDO
Monitor	None	None	None	None	None
Sound Card*	Sound Blaster 32	Sound Blaster 32	Sound Blaster 16	Sound Blaster 16	None
Hard Drive	Seagate 4.3GB Ultra SCSI	Western Digital 2.5GB EIDE	Fujitsu 1.7GB EIDE	Seagate 2.1GB EIDE	Seagate 1.9GB EIDE
SCSI Card	Adaptec 2944AW	None	None	None	None
CD-ROM Drive	Panasonic 10X	Panasonic 10X	Sony 6X	Panasonic 10X	Panasonic 10X
Modem	None	USB 24.0Kbps fax modem	USB 24.0Kbps fax modem	24.0Kbps fax modem	24.0Kbps fax modem
System BIOS	Award	Award	Award	Award	Award
Plug & Play Support	Yes	Yes	Yes	Yes	No
Operating System	Windows NT 4.0	Windows 95	Windows 95	Windows 95	Windows 95
Extras		Speakers	Speakers	Speakers	Speakers
Windows Benchmarks					
Desktop Publishing	130	138	130	141	151
Desktop Graphics	173	145	178	176	178
Desktop Presentation	138	150	156	156	161
Word Processing	180	149	146	149	159
Spreadsheets	152	173	162	143	152
Databases	181	141	148	146	159
System 3D	171	168	151	148	168
Contact	(800) 273-9800	(800) 543-2579	(800)40-0002	(800) 712-2800	1-800-680-6322
Internet contact	www.compaq.com		homeinfocal-dell.com	www.datcom.com	www.arena.com
Suggested Retail Price	\$4,699	\$2,899	\$2,899	\$4,199	\$2,199
Street Price	\$4,099	\$2,399	\$2,699	\$2,999	\$2,099
Reseller Price	N/A	\$2,199	\$2,499	\$2,599	\$1,899
Warranty	3 years	2 years	3 years	2 years	3 years
* Operating system not included in system price					

iNet — LGF Advanced Tech**Suggested Retail Price:** \$2,999**Street Price:** \$2,495**Reseller Price:** \$2,140**Reseller Authorization:**

Authorization depends on reseller size and location.

Marketing Support for Resellers:

Reseller referrals and POP displays.

Maintenance Relationship With Resellers:

Warranty includes three-year parts and six-year labor.

Web site includes technical information and drivers.

Volume Discounts:

Volume discounts are negotiated with each order.

Demo Unit Availability:

Demo units are available at special prices with restrictions.

System Strengths:

The company says, "The strength of our iNet computer systems is their quality, reliability, compatibility and high performance."

Editor's Notes:

With a score of 155 on our BAPCo benchmark, note, this system was among the fastest ones tested. The 200MHz Pentium processor is aided by 512Kbps of pipelined cache and 32MB of EDO RAM. The 4MB ATI 3-D video card is expandable to 8MB of SGRAM, and has the capability of redirecting output to a TV. To complete the system is a 2.0GB hard drive from Quantum, a 12X CD-ROM from Maxtor, a Sound Blaster 16 sound card, and a 33.6Kbps modem from Net Robotics.

**Mythic Mycomp Envision****Suggested Retail Price:** \$3,400**Street Price:** \$3,300**Reseller Price:** \$2,685**Reseller Authorization Requirements:**

Resellers must have an office or storefront with in-house tech support for end-users.

Marketing Support:Reseller referrals.
National advertising.**Maintenance And Technical Relationship With Resellers:**

Three-year warranty and sales, parts, and labor.

1-800 technical support for resellers.

Reseller training seminars.

Dedicated technical HR.

Web site includes technical information and drivers.

Volume Discounts: Yes**Market View:**

The company says, "This product market will be for high-end users and a good entry level for corporate users with Windows NT as the OS."

Editor's Notes:

From Quebec's Mycomp comes a well-balanced, competitively priced system. Features in this unit include the standard 200MHz Pentium processor, 256KB of Level-2 cache, 32MB of RAM, and a Matrox Millennium video card with 2MB of VRAM and a 3.2GB Quantum hard drive. An ESS1688 sound card provides 16-bit stereo sound. The 1X CD-ROM in this system is not as fast as the newer 12X variety, but still very reliable. To add the finishing touches, Mycomp has included a 33.6Kbps fax modem from Supra.

**ServiceWorks Distribution Inc. DataTrain P200****Suggested Retail:** \$3,199**Street Price:** \$2,999**Reseller Price:** \$2,599**Reseller Authorization/Listing:****Marketing Support for Resellers:**Co-op advertising and marketing funds.
Reseller referrals.
1-800 1x-in and POP displays too.**Maintenance And Technical Relationship:**

Two-year warranty includes parts and labor.

Reseller training seminars.

Dedicated tech HR.

Dealer specific space on Web site.

Web site includes tech info and drivers.

Volume Discounts: Yes**Demo Unit:** Yes**Market Positioning:**

The company says, "The product is designed to provide... the latest and most flexible systems incorporating the latest technology such as local MMX, and USB connectivity."

Editor's Notes:

This DataTrain system features a 200MHz Pentium CPU, 512KB of pipelined cache, and 32MB of RAM. Hard drive storage should be adequate for the next while with a 2.0GB drive from Quantum. The Panasonic 12X CD-ROM should make working with CD-ROM based software a breeze. Video is accomplished through an ATI Mach64 with 2MB of DRAM onboard. To complete the system is a 33.6Kbps fax modem, a Sound Blaster 16 sound card and four software titles. Performance of this machine was at acceptable levels based on given components.



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QA COMP

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Marketing Support:

Nation-wide advertising

Ready-to-use marketing materials

Maintenance And Technical Relationship With Resellers:

Dedicated Internet technical support.

Web site includes updated documentation

Web site includes new drivers

Does Unit Availability:

Demo units are available with instructions

Systems Strengths:

"We provide up-to-date configurations and toll-free technical support. We use only quality components, have strict quality control,

and a compliant handling system to ensure total customer satisfaction," says the company.

Editor's Notes:

QA is known for providing us with fast systems at competitive prices. This month's evaluation was composed of 32GB of EDO RAM, 512KB of pipelined cache, an ATI 3-D Pro Turbo video card with 4MB of SDRAM, a Quantum 2.0GB Wide SCSI drive with an Adaptec 2940UW controller. Multimedia components include a 12X CD-ROM drive from Toshiba, a Sound Blaster 5.1 from Creative Labs with a Yamaha D080000 daughterboard option and a 33.6Kbps V.90 fax modem. Overall, the system's performance was near average.



Ultimet

Suggested Retail Price: \$3,298**Street Price:** \$2,998**Reseller Price:** \$2,818**Reseller Authorization:**

A reseller permit from the provincial government is required.

Maintenance And Technical Relationship With Resellers:

Two-year warranty includes parts and labor.

1-800 technical support for resellers.

Dealer-specific pages on Web site

Web site includes technical information

Volume Discounts:

Discounts are available after 10 and 20 units are purchased

Does Unit Availability:

Demo units are available for potential large orders

Email: info@ultimet.ca

Market Penetration:

The company says the P-300 is ideal for heavy users, becoming the benchmark for high performance.

Editor's Notes:

Ultimet is known for packing a lot of power into a little box. When it comes to benchmark results, Ultimet computers are among the fastest in the lot. This month's system was no exception, scoring an overall 169 on our benchmark suite. The machine itself includes 64MB of EDO RAM, Intel's 486DX chipset, 512KB of pipelined cache, a Matrix Millennium with 4MB of WRAM, and the new Quantum 3.0GB Pinball. For a great combination of multimedia accessories, the system includes an Acer 12X CD-ROM, a Sound Blaster 32 and a pair of 100W surround sound speakers.

**Performance**

Our award for best performance is always given to the fastest system in our survey. This month, the award goes to Express Micro. Every time we test computers, there are always one or two systems which stand out. This machine managed to outperform all of its competitors, and is packed with nothing but the best of computer hardware. When it comes to high performance systems, this is the system to get.

**Price/Performance**

This month's winner of our Price/Performance award goes to Dawa. Here's a computer that is filled with great components, and one that managed to achieve a very respectable score on our benchmark suite. The ever-popular Matrox Millennium and Western Digital hard drives were key factors in making this machine to obtain this award.

**All Round**

If your customers are looking for something with both power and good looks, this month's STB system from IBM is a definite winner. The unit is equipped with the new ATI 3D Rage video card with 2MB onboard, and IBM's own very fast 3.3GB hard drive. The basic configuration includes a 17-inch monitor, with the option of a 17-inch version for a few hundred dollars more. DR

Steve Hahnke, The Englehart-Halls and Jess Blawie are COW's Lab Test Editors. They can be reached at (416) 213-8904



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Provides New Market For Graphics/DTP

by Geoff Wardlawright

Dealers and resellers specializing in the graphics and desktop publishing software markets are set to reap the rewards of the recent string of new product announcements made by key industry players. And there is a clear tilt toward providing applications that make World Wide Web pages, as well as paper-based documents, look colorful, stylish and snappy.

Corel Draws A Lucky Seven?

The most high-profile of these announcements was Corel Corp.'s unveiling of its CorelDraw 7 graphics package for Windows 95 and Windows NT 4.0 — including retouched versions of the three main applications: CorelDraw, Corel Photo-Point and CorelDocker 3D.

Corel claims that its new flagship graphics product is easier to use, provides improved memory handling, faster file open, save, export and redraw functions — as well as the now-obligatory Internet graphics support (including the ability to create image maps and publish in HTML).

As usual, this new version of CorelDraw also includes a grab-bag of other supporting utilities:

- **Corel Multimedia Manager 7** — This "visual file manager" utility is supposed to help users to organize and manage graphics files.
- **Corel OCR-Trace 7** — Corel calls this its "enhanced" optical character recognition-to-vector conversion utility.
- **Corel Texture** — This procedural texture-generation program promises to allow the creation of simulated natural textures like marbles, woods, stones, clouds and metals.
- **CorelScan** — This scanning utility includes graphic processing options.
- **CorelDepth** — This utility is supposed to make it easy to create 3D logos and text.
- **Corel Capture 7** — This is a head-to-head screen capture utility.

• **Corel Script Editor and Corel Script Drawing Editor** — These are scripting utilities that Corel hopes will be used by corporate customers, in particular, to create add-on utilities for CorelDraw and Corel Photo-Point through OLE 2.0 automation.

• **CorelMemo** — Corel calls this the "an OLE compliant utility that allows users to attach notes to their drawings or documents" without altering the original graphics or text.

Aside from these applications, Corel has rescripted the package so that it should work with Photoshop-compatible plug-in filters — including Kai's Power Tools 3.0 SE, Extensis Intelligence 3.0, Cytopia PhotoLab, the heavily-typed "digital watermarking" filter by Digitama Corp., and AmatoFX's PhotoGraphic Edges — when using either CorelDraw or Corel Photo-Point.

The company has also included the usual "batteries included" full of other extras, including some 32,000 clip-art images and symbols, 1,000 Adobe Type 1 and TrueType fonts, 1,000 high-resolution photos, more than 250 three-dimensional models and in excess of 400 CorelDraw and PageDirect templates, floating objects and tiling patterns.

Anyone who has followed the fortunes of this product, however, is used to seeing a shopping list of new features, it's always a long one. But one fundamental new direction that dealers, in particular, should welcome is Internet support. Although, as suggested earlier, it is almost obligatory in the current

Internet-and software sales environment to include such features — the fact that they are in a key product such as Corel's does change the way it can be sold.

For example, CorelDraw 7 now allows users to assign URLs to any object and publish documents to HTML, GIF, JPEG or Corel Bitmaps (Bitmaps being the technology Corel has developed to let users create documents based entirely on the Sun Microsystems' Java Language without any programming requirements).

Perhaps trying to appear neutral in the "browser wars," both Netscape Navigator and Microsoft Internet Explorer color palettes are included so that Web pages can be designed to be optimized for either. There is also a direct link within the Help menu in CorelDraw 7 to Corel's home page. There's also support for some new input technologies in the Natural Pen tool which can be used with a pressure-sensitive tablet to create curves of varying thicknesses as well as calligraphic effects (Corel says this tool is also great for artistic sketching).

Finally, CorelDraw users are also going to see some benefits from the WordPerfect deal with new writing tools in Version 7.0 that come from Corel WordPerfect — including a spell checker, a thesaurus and a grammar checker, as well as Business's TrueDoc font embedding technology.

The way that Corel has developed and rolled out this latest version of its flagship

GRAPHICS/DTP CONTACTS:

Corel	(613) 736-6200	http://www.corel.com
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Adobe	(650) 628-4521	http://www.adobe.com
Quark	(800) 894-8888	http://www.quark.com
Microsoft	(800) 968-0434	http://www.microsoft.com/publisher/971/astashen/
Micrografix	(605) 332-8641	http://www.micrografix.com/



graphics product is also a clear indication of something much more important. Unlike Novell, which analyses any "look at eye of the ball" on its core networking business when it acquired WordPerfect, Corel appears to have continued its long tradition of quickly and effectively continuing to use its acquisitions to add value to CorelDraw, while also allowing them to effectively develop in their own right. (That's a strategy the company developed to great effect when it first acquired the Ventura desktop publishing software from Xerox more than three years ago.)

Desktop should also be happy to see the system requirements for CorelDraw 7, which promise to encourage a number of users to either upgrade or get completely new systems. To use this graphics mainframe, users will need a minimum of a 60MHz Pentium processor (with a minimum of a 120MHz Pentium recommended), 16MB of RAM (32MB recommended), 40MB of hard disk space to install CorelDraw, Help, filters and fonts, a CD-ROM player (double-speed or higher recommended), a mouse or tablet/VGA display (SVGA recommended), and either Windows 95 or Windows NT 4.0 as the operating system.

In addition, desktop should also benefit from the appeal of aggressive pricing — particularly where upgrades are concerned. CorelDraw 7 has a suggested list price of US\$695, with an upgrade price of US\$349 for users of any version of CorelDraw from either the Windows or Macintosh platform. Both Corel Ventura and Corel Office Professional 7 users will also be able to take advantage of the upgrade price.

The Macromedia Challenge



After Corel laid down the gauntlet to the graphics software industry with the CorelDraw 7 launch, the challenge was picked up by Macromedia as it introduced FreeHand Graphics Studio 7. Although FreeHand has been around for years — and gained fame as a sister product to Adobe PageMaker (subsequently sold off after Adobe took over Aldus) — this is the first major release under the Macromedia banner since the huge success of Macromedia's ShockWave technology for displaying graphical, multimedia Web pages. It thus includes lots of tools for Web publishing — and also bears the distinction of being simultaneously released for both the Windows 95 and Apple Macintosh platforms.

To start with, as one would expect, FreeHand Graphics Studio 7 is ShockWave-enabled, allowing developers to create vector

and bitmap art for the Web. This should give any customers who need to design Web pages a real boost, as it means that their "active" ShockWave pages can now be viewed by any of the 12 million users worldwide who have apparently downloaded players.

In fact, the release of ShockWave supported in this new version of FreeHand is as good as displaying that it is graphics — with the ability to embed fonts in documents and display text, anti-aliased fonts, even if the fonts are not installed on the viewer's machine. Macromedia is further promising on-line viewers of FreeHand-created, ShockWave-compatible pages will be able to pan and zoom on selected artwork and magnify by as much as 35,600 per cent without sacrificing resolution and clarity. ShockWave also allows users to create "hot links" or add URLs to any graphics. In addition, Macromedia boasts that the ShockWave Advanced compression feature reduces file size by approximately 50 per cent, allowing for faster download and display times.

Macromedia is shipping FreeHand Graphics Studio 7 ships with the Photographic 4.1 font creation tool — as well as 10,000 clip-art images, 500 FreeHand templates, 500 TrueType and PostScript Type 1 fonts, 300,000 of high-resolution photographs, and "format" of three-dimensional models.

FreeHand Graphics Studio 7 is available for Windows 95, Windows NT, Macintosh G4K and Power PC for what it says is an approximate street price of US\$445, while registered users of the previous version of the product (or any of the software applications in it) can upgrade for US\$199. And to grab market share from the competition, anyone using Adobe Illustrator, CorelDraw, Canvas and Micrografx Designer can also get a "competitive upgrade" to FreeHand Graphics Studio 7 for \$199.

Don't Count Adobe Out

While Corel and Macromedia have been grabbing headlines, Adobe was by no means standing still — particularly with developments for its Photoshop product. Late last year, for example, Adobe began rolling out Adobe Photoshop version 4.0 for both the Macintosh and Windows platforms.

Adobe says the offers a wide range of new features that increase creative control and productivity. Key new features in Photoshop 4.0 include Actions (which support task automation and batch processing) and Adjustment Layers (which are special layers through which image adjustments can be applied without permanently modifying

the original image).

In fact, many of the things you'll find in CorelDraw you'll now find — in one form or another — in Photoshop. The company says, for example, that many users have requested an easier way to align elements in a multi-layered file, so Photoshop 4.0 supports custom Guides and Grids. In addition, this new version also includes the same digital water-marking technology (provided by Digimarc Corp.) as Corel that is used for on-line copyright protection and artist information.

In addition, Adobe has tried to make changes to Photoshop that match those being made across the Adobe graphics product line (including Illustrator and PageMaker), so that users get more consistent access to commands and tool palettes even when switching between multiple applications.

Despite being designed to run on different platforms, Adobe is also claiming that Adobe Photoshop 4.0 makes the most of each of them, with support for symmetric multi-processing on Windows NT and Macintosh systems, as well as broad optimization for Intel's new MMX chip architecture. The company takes pains to point out, however, that despite this optimization for specific platforms, the Macintosh and Windows versions of Adobe Photoshop 4.0 share a common feature set and user interface layout, and all data file formats are fully interchangeable on Macintosh and Windows platforms.

And There Are Many More....



This is by no means an exhaustive description of what's on offer from the industry's key players.

There have also been significant new enhancements rather

promised or delivered for the graphics and DTP products by Micrografx, Quark, Adobe's PageMaker division, Microsoft's unveiling of Publisher 97 and lots of other less well-known releases.

The key point to make is that the graphics and DTP sector is one area where there is still a significant degree of product choice available for software vendors.

While Microsoft, Corel and Adobe are major protagonists in this market, they do not utterly dominate it to the exclusion of everyone else. And for studios and desktops trying to offer a range of solutions that has to make this market an attractive option for those considering greater diversification. ■



Geoff Whitham is a Macromedia-based technology and business journalist. He can be reached at geoffwhitham@netcom.

MMX — the new standard

Multimedia-enhanced CPUs will power this year's newest computers

by Alan Zimmerman



Backward compatibility is either a blessing or a curse. It means your new technology can still work with your old data, hardware, and software — that's good. But, it also means that you may be unnecessarily tying yourself to the old generation's limitations. That can be bad.

CPU king Intel has been following the backwards compatibility route ever since the popularity of the original Intel processor-driven IBM PC.

Even five generations of chips later, Intel's x86 family of chips still shows its ancestry. Even the limited number of new processor instructions included in Intel's 486 chip are only now being included in popular 32-bit operating systems.

So when Intel decides to upgrade the instruction set, the collection of commands built into the processor, it's news.

In this case, the result is the MMX family of processors

— replacements for today's Pentiums and Pentium Pro, with new instructions optimized for multimedia. Compared to the first of the MMX family, the P-55C replacement for the standard Pentium are becoming available, following MMX's official Jan. 8 unveiling.

A P-55C machine will run even old applications a bit faster than a standard Pentium running at the same clock speed. But this modest (five to 10 per cent) speed increase is primarily a result of the larger, 32KB Level 1 cache built into the new design. As well, the MMX family offers new tricks, such as Single Instruction Multiple Data (SIMD), which lets the CPU run operations in parallel. But to take advantage of these new features, software will have to be specially written. At the moment, virtually nothing is available that makes full use of the MMX instruction set, but Intel claims that properly optimized applications will be able to provide a performance boost of up to 60 per cent.

As well, while the standard P-54C

Pentiums and the new MMX P-55C Pentiums are pin-compatible, you can't simply pop the new chip into an old motherboard — you need a control chip-set (from Intel), and a BIOS that's designed for the new CPU. The newest motherboard and BIOS designs anticipate this, however, and can be set for either Pentium model.

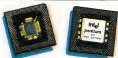
Users of older machines need not feel left out. Intel has announced plans for a series of MMX Overdrive chips to upgrade original Pentiums. Using clock-multiplying technology, these will speed up the systems while

also adding the multimedia capabilities. These Overdrive chips will require an upgradable motherboard, but will include built-in voltage regulators, so that they can convert older, 3.3-volt systems to the new 3.8-volt standard. The initial P-54TCE Overdrive processor will upgrade Pentium 33MHz, 40MHz and 100MHz models to speeds ranging from 115MHz to 160MHz. Later models will be made available to upgrade more recent Pentiums to speeds

up to 200MHz. While Intel will be making these available through retail channels later in the first half of 1997, there are no plans to make these chips available for OEM sales.

Further down the road are other members of the MMX family. Intel is planning a version to replace the current high-end Pentium Pro, code-named Klamath (a river in Intel's home state, Oregon). Klamath will debut at 133MHz, but will entail major changes in the Pentium Pro design. The current processor is really two chips in a single package — the actual CPU and a built-in Level 2 cache. Klamath will remove the L2 cache, resulting in a chip that will sell for less, but will deliver less performance than equal-speed standard Pentium Pro systems, even with the beefed-up 32KB L1 cache. It's expected that the release of Klamath will drive down prices for P-55C machines, with these Pentium Pro models replacing them as entry-level machines by the end of next year. Around the same time, look for P57 — Pentium Pro upgrade chips, expected to run at around 200MHz.





And following Klamath, Intel will be launching Deschutes (also a move to Oregon) — a low-voltage, high-speed (starting at 300MHz) processor line that will be aimed at mobile computing. But notebook users won't have to wait until then to take advantage of MMX technology — a variety of companies were showing demonstration machines at last fall's Comdex show, running 160MHz to 300MHz P-55C CPUs. Such notebook designs should be widely available by mid-1997.

Intel's rivals won't be left too far behind, however. Both Cyrix and AMD have announced their own multimedia-enhanced CPU models that will be competitive with Intel's designs. AMD's K5 chip and Cyrix's M2, for example, will both be offering a 64KB L1 cache, double Intel's offering (and quadrupling the cache on a standard Pentium). Each will also offer the MMX instruction set, and will be pin-out compatible with standard Pentiums, allowing them to be usable in current motherboard designs (with appropriate BIOSes). The Cyrix chip will run at 2.5 volts (compared to 2.8 volts for Intel's design), making it potentially a contender for mobile computers.

Intel and its competitors clearly hope that the MMX-enabled chips will provide next-generation power to the Kix66 family of processors — speeding up 3-D and graphics rendering. This is vital for CAD and graphics professionals, and early reports suggest that a MMX processor may actually run Adobe Photoshop faster than current high-end PowerBlades. Even more important is the gaming market, which drives the bulk of home purchases. Intel is planning to encourage manufacturers to clearly label MMX computers, and is planning a major advertising campaign, reminiscent of its "Intel Inside" push.

But there is a flaw in the MMX strategy.

When using the MMX registers of the chip, the CPU has to turn off the floating-point registers — both can't be used at once. This is needed to maintain compatibility with existing operating systems. And switching modes like this takes time — about 30 clock cycles. As a result, Intel suggests that application developers refrain from using floating-point operations as much as possible. This, however, may prove a problem, especially working with 3-D. (Cyrix claims that its model can switch modes in a single clock tick.)

As well, this causes potential problems for multitasking. Try running an MMX-optimized graphics application and (for example), a spreadsheet using floating-point calculations at the same time. Performance will suffer because of the frequent switches between floating-point and MMX modes, but as well, the spreadsheet may end up with the wrong data, as graphics data mixes with its calculations. We had better hope those engineers aren't playing games at the same time as calculation nuclear reactor designs!

Only time will tell whether this turns out to be a major limitation — certainly floating-point calculations are rarely used by most traditional applications, even your spreadsheet will correctly calculate your tax returns without ever once needing to use floating-point math.

Despite these potential problems, count on MMX-enabled designs to be the industry standard, through to the end of the decade. ☐

Alan Zisman is a computer journalist and teacher living in Vancouver.

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What You Need to Know About Leases

by Douglas Gray

Retailers — minimize your risks when negotiating space for your business



As a retailer or wholesaler, you most likely already have some form of lease with your landlord. However, if you are thinking of moving at the end of your lease, or if your lease is coming up for renewal, there are various important strategic and tactical issues to consider.

There is always a potentially high degree of personal and business risk in signing a lease. The location may turn out to be a poor one, disputes with the landlord could occur, the building image could deteriorate, the space could be too small or too large for your evolving needs, competition may start to affect the business, or health, rental or partnership problems may impair the business operation. For these reasons and many more, it is vital that precautions be built into a lease to minimize risk as much as possible.

Many small business owners are not aware of the wide range of protections that can be negotiated into a lease. Here are some common effective techniques to discuss with your lawyer when negotiating the offer to lease or renegotiating your lease.

Incorporate The Business

It is wise to incorporate in any business situation that involves high risk. A long-term lease obviously involves potential risk. Statistically, about 75 per cent of small businesses discontinue operating by the end of 3 years.

For all these reasons, incorporating a company and signing the lease under the corporate name would be a prudent consideration. That way the liability is limited to the corporation assets only, without any liability by the shareholders.

No Personal Guarantee

For a corporate lease, it is not uncommon for a landlord to request personal guarantees from the directors. While approximately 30 per cent of landlords might request a personal guarantee, the majority of those could be persuaded to waive or modify this request through effective negotiating techniques.

Another approach is to limit the amount

of the personal guarantee. You may negotiate a provision that the personal guarantee automatically expires at the end of the first year of the lease. This clause could state that in the event that the lease is terminated by the tenant before the end of the year, the personal guarantee shall be responsible for the balance of the first year's rent. From the perspective of the landlord, the first year is probably the highest risk with a new tenant. The landlord would be protected in that the tenant would be responsible for at least one year's rent.

If a personal guarantee is given, it could be on condition that the guarantee be limited to a fixed amount, such as a maximum of three months' rent.

Negotiate A Penalty Clause

You may wish to negotiate a three-month penalty as the total amount of damages that the landlord could expect from the tenant in the event that the lease is breached.

In this example, no other security would be given to the landlord and the landlord would have no further recourse against the tenant if the tenant left before the term of the lease.

Another form of penalty provision could be that the amount of this penalty be decreased based on the length of time that the tenant remained in the premises under the terms of the lease.

Try A Short-term Lease With Options To Renew

To minimize the risk associated with signing a long term lease, you may instead decide to have the initial lease period relatively short. By the end of the short-term lease, you would be in a better position to decide whether it is viable to remain in the leased premises for a longer period of time.

For example, rather than signing a five-year lease it might be prudent to negotiate a one-year lease with two renewable two-year options. If you wanted a seven-year lease, you might negotiate a two-year lease with two renewable options for two years and three years.

This type of structure would enable you to stay for the full period of time if desired, but with limited time interval commitments

A provision could be negotiated that there would be no increase in rent at the time of the first option, but that there could be an increase in rent at the time of the second option if the landlord so elects. The clause would then set out the amount of the increase, or a formula under which it would be calculated, if any rent increase was to occur. Also, remember to negotiate for the maximum additional tenant incentives every time you renew the lease.

Ask for Tenant Incentives

Often a landlord is willing to offer a free rent period, reduced rental payments or a lump sum in cash for leasehold improvements as an incentive to rent the premises. This is particularly the case when the space has been vacant for some time.

Try to structure the rent payments in the first year to limit the financial outlay as much as possible. The normal range of options include: graduated rental payments, free base rent period for from two to four months for each year of the lease, waiver of first-year maintenance payments, landlord paying costs of renovations up to an agreed maximum, or a combination of the above.

Whenever you are dealing with a landlord, make sure you develop a negotiating mindset that is clear on what you want. You don't get what you don't ask for. Depending on the circumstances and your negotiating leverage and skill, you could end up with a low mid-high benefit lease on your terms. Also make sure that you use the services of a business lawyer skilled in lease negotiations. Only a street-smart lease lawyer would be aware of the nuances and implications of lease terms and conditions. ☐

Douglas Gray, LL.B. has had extensive experience as a lawyer specializing in small business. He is also a speaker and author of 13 best-selling business books, as well as an investment software program. His books include The Complete Canadian Small Business Guide and Raising Money (both published by McGraw-Hill Ryerson) and Mastering Your Procter and Gamble and Run a Profitable Consulting Business (both published by Self-Concept Press).

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Resellers — watch the stock market

A good understanding of the market can help you identify potential winners and losers

by Thomas Klein



In the technology sector, 1996 was an interesting year for the stock market. Stock performance started off slow and started to improve in the spring before being panicked in mid-July — only to rally to dizzying heights in the last two quarters.

The technology sector since June of 1994 has rallied as a group of companies more than 120 per cent in market value. This begs the question: will tech stocks correct in 1997?

"There is a cliché in the investment industry: 'the trend is your friend'."

The majority of analysts do not seem to think so. They remark that the technology sector is growing at more than 25 per cent per year — better than any other industry in the market. Profits rose last year at better than 25 per cent. In fact, some of the growth and profits for other industries are poised to slow — and therefore more investors will be looking at the technology sector to maintain growth in their portfolios.

Many investors realize they should have some of their assets in the technology sector and the market is starting to respond. The number of mutual funds that speculate in the technology sector increased last year, as well as the number of analysts covering individual technology companies. This growth in exposure will provide additional investment capital for the high-tech sector, which will help sustain the rapid growth of the industry.

There are many factors that bode well for 1997. The economy is in great shape. The economic environment of increased consumer confidence coupled with low inflation and low interest rates is extremely conducive to growth. The positive economic climate along with the fact that the industry is entering the first phase of

major new product cycles should result in maintained or surpassed projected growth rates for the industry.

The dominance of Intel and the successful launch of the Pentium Pro should continue to drive sales of PCs. The demand for quality software will remain strong as the usage of computers continues to grow. The Internet and the related infrastructure will once again be a growth leader for the industry. Updating systems for the year 2000 should start to kick in, as 1997. The growth in wireless communications is another sector in the technology industry entering a new product cycle and will contribute to the positive environment for the sector.

Many consumers and corporations delayed purchases in 1995 because the industry was testing more advanced products for 1997. But 1997

is here, and consumers cannot afford to stand on the sidelines much longer. The innovations over the past three years almost guarantees that upgrades in hardware and software will drive sales in 1997. With all the new technology products, plus pent-up consumer demand, the outlook for 1997 is indeed positive.

Why should resellers care about the stock market?

The stock market tends to be an excellent forecaster of a company's future growth. Many people directly involved the technology industry tend to be blinded by the latest technology. They admire new technological innovations and do not always consider that, in the market-place — the best product does not always become a commercial success!

Stock market advisors can assist in monitoring the acceptance of new products and the continued viability of existing products.

In the fiercely competitive reseller market, it is important to stay on top of product sales, cycles and the earnings of the companies represented. There might be hidden clues as to the future success or failure of a particular product.

by watching the stock market. As a rule, the wisest tactic to predict a company's future anywhere from six to 18 months in the future. Monitoring the stock prices of different technology companies might alert a problem in inventory control in either having too much or not enough of a particular product.

If a company is under sustained downward pressure, you can be sure that there are some problems on the horizon.

I'm not talking about normal market fluctuations but rather a distinct shift in sentiment by analysts and investors.

There is a cliché in the investment industry — "the trend is your friend." It seems to fit the technology sector well. The past is full of examples of positive and negative trends for technology companies. Most significantly, downward or upward trends seem to last for more extended periods in the technology sector than in some other industry groups. For upward trends, the performance of Microsoft and Intel are excellent examples. A downward trend for Apple was equally evident and forecast by the market. Since 1991, Apple's stock has declined from US\$175 to US\$17 at press time. Remember that trends in the technology industry are hard to

"Perhaps the best suggestion is to invest in a diverse set of companies with complementary but different product lines."

break. Companies that lag are punished to a point where it may be difficult to recover and winners are rewarded so lavishly that they become power houses.

The trends of the stock prices of technology companies are good indicators of a company's financial health.

A trend to remember from 1996 was that many of the larger companies were increasing

market share. It will be increasingly difficult for smaller companies to penetrate the market. They will either be acquired by the bigger companies or starved out of the market in short order.

Retailers and investors alike should choose their companies wisely and look at the big picture. Perhaps the best suggestion is to invest in a diverse set of companies with complementary but different product lines. Over the long run, whether in business or as an investor, a consistent sustainable return will beat out "one-year wonders" every time. ☐

Thomas Klein is an investment adviser with ScotiaMcLeod. He can be reached via <http://www.scotiabank.com/concavey>.



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- ☐ Purchasing and merchandising managers
- ☐ Product development managers
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- ☐ Technical management
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Which best describes your firm's primary business at your location? (check one only)

- ☐ Value added dealer/reseller
- ☐ Move manufacturer
- ☐ Computer electronics/office machine retailer
- ☐ Distributor/wholesaler/hardware manufacturer/OEM
- ☐ Software developer
- ☐ Systems integrator/software consulting
- ☐ Government purchasing agency
- ☐ Computer maintenance/service company
- ☐ Hardware/software retailer
- ☐ Other third party and allied service firms

The systems my organization integrates or resells are based on the following: (check all that apply)

- ☐ DOS/Windows
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- ☐ Windows NT
- ☐ Networking
- ☐ Unix
- ☐ Macintosh

What is the number of employees at this location? (check one only)

- ☐ 10,000 or more
- ☐ 5,000 - 9,999
- ☐ 2,000 - 4,999
- ☐ 1,000 - 1,999
- ☐ 500 - 999
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- ☐ 100 - 249
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Microplex NetEye holds promise

— but timing is everything

By Derail Tanaka

It's the mythology that drives the inventive spirit: build a better mousetrap and the world will beat a path to your door. However, the reality is that innovative products by their selves don't guarantee success in the market. Like good comedy, commercial viability also relies on timing and delivery.



Take the case of the NetEye270 Private Server from Microplex Systems Ltd. in Burnaby, B.C. If the company makes just the right moves — it could be entertaining to a full house with this product.

The NetEye270 is a cost-effective way to post live images on an Ethernet network and, by extension (and here comes the magic marketing word for the '90s), the Internet or a corporate intranet. The half-pound NetEye270 unit is a model of simplicity: one 11Base-T RM45 Ethernet port, one Connectix QuickCam interface and a connector to an external power supply. Plug the unit into an Ethernet node and point the camera at whatever it is you want to monitor and within 30 minutes, you have live pictures accessible through your LAN.

Rather than developing some proprietary imaging software, the company had the foresight to use technologies that many PC users already have and know how to use: either a standard Web browser, or FTP client software.

"What the NetEye270 lets you do is basically get images right on your LAN with standard (World Wide Web) browser soft-

ware," says Gerry Sawkins, director of marketing with Microplex Systems Ltd.

Web sites featuring live pictures have always had their fans, with "view from Sid's north window" and "camera pointed Horlan's guppies" styled Web sites always managing to attract a fair share of Web hits. Putting real live pictures on the Web has usually required a dedicated PC with video frame grabber to capture the image from a source such as a camcorder. What the NetEye270 offers is a dedicated image server that costs around \$360, less cents.

When combined with a Connectix QuickCam black-and-white or color digital camera (it only supports the Connectix variety), it creates an eye on, well, that's the question. So far, the company has defined a couple of potential applications for NetEye270, but the real challenge is ensuring that quirk that causes a large chunk of PC users to say "I need that."

One application proposed by Microplex is to use the NetEye270 as a low-cost video security system. If a company has already gone through the expense of setting up an Ethernet-based LAN, it can extend its vision by plugging a NetEye270 into the LAN.

"The problem with traditional security systems is that they're a network unto their selves," says Sawkins. "You end up installing a separate network. That's usually the largest cost, and then you get all the specialized equipment on them."

The only requirement to setting up a NetEye270, he says, is to have a LAN in place. "Once you've got that, you're pretty well in business. You just need a 10Base-T network and standard browser software on your PC, and you're in business. You give it a URL, just like any other network node or Web site, and you hit on it just like a standard Web site."

Another potential application is in monitoring of traffic conditions, for example. Sawkins says the company is in preliminary

discussions with the B.C. Ministry of Highways to set up traffic monitoring "eyes" pointed at bottlenecks such as the Lion's Gate Bridge in Vancouver.

Microplex is also looking at the product as a general retail item. "You could build your own home intranet and use it for monitoring the doors or monitoring the dog or whatever," says Sawkins. "Grandparents can dial in and see the grandkids." The Microplex executive is apparently wiring his house and plans to put a NetEye270 in the baby's room so that he can dial into home from his laptop when he's on the road and have a peek at the new born.

Of course, to make this happen, the company needs to generate some excitement around the product. It did manage to gain some publicity during last summer's Olympic games in Atlanta. Users browsing the Olympic Web site could peek into the Olympic Square via a NetEye270 system that had been set up in the Olympic village.

Microplex is now trying to fine up other "high-profile" Web sites where they can demonstrate the technology. The company is also formulating a channel strategy.

"Off the North American continent, we've been using the channel exclusively," says Sawkins. "In North America, for the past year, we've been stretching to an indirect strategy completely — A two-tier system working with VARs and systems integrators." Sawkins says EMI Distribution is handling distribution for North America.

The monochrome version has been shipping since August 1996, and the color model was released just before Christmas.

This product seems right for the times, and with the right push, could turn out to be a nice Canadian success story. ■

Derail Tanaka is a Vancouver-based journalist specializing in high technology, and is News Editor of The Computer Paper. He can be reached at derail@sepa.ca.

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PC Prognostications for '97

by Graeme Beckett



PC onward design and, to a lesser extent, manufacturers, will have some new software and hardware considerations to think about and plan for during 1997. (The operating system upgrade plans of the 3.4 per cent of the market that uses Macintosh made.)

MMX is sure to make a splash, despite the architectural shenanigans that the chip tries to do in MMX space. However, I'm betting against Motorola's software-only machine technology running on MMX chips. This sounds a little too much like IBM's M4AVE, Apple's Geopost Telecom Adapter and the "Windows only" machines of the last couple of years—all relatively troublesome products. I also expect MMX to fare better in the entertainment-class PCs market than with business users. All it takes is the mainstream media to fan a few stories about some major applications' CPU performance degradation under MMX, and you can bet the CPU power users will be playing shy. Despite the high-end focus of initial MMX-based products (and the 10 per cent to 20 per cent performance improvements the chip's 32KB cache brings to business class apps), I expect it to do well with entertainment-oriented users.

And, despite reported delays in Intel's follow-up Klamath (multi-media Pentium Pro) architecture, it is likely that Pentium Pro systems will approach—if not assimilate—the mainstream. At any rate, our tests have proven without a doubt that MMX systems outperform similarly clocked non-MMX systems by an average of about 10 per cent, even on non-MMX-enhanced titles, due to the chip's larger on-board cache. Indeed, 166MHz MMX systems tend to fall in the middle of the pack of non-MMX 200MHz Pentiums.

I'm willing to hazard a guess that we will see some blown-out-of-proportion mainstream news stories about MMX "fatal flaws." There are sure to be some legitimate concerns about the fact that the CPU registers are doing double duty but this doesn't diminish my feeling that MMX systems are going to be hot sellers.

Packet Writing

Another technology that will be a big hit in '97 is packet-writing CD-R technology. This is the method of writing a compact disk that doesn't require the user to write the whole CD—or even an entire session—at once. With packet-writing, one can simply "save" files to a CD-R, as if it were a floppy disk. The long-suffering floppy will be put

out of its misery not by Zip disks, 320MB floppies, but by under-\$500 CD-Rs that are easy enough for mere mortals to use. By the end of '97, CD-R will be widely used as a backup method, and packet-writing will be the buzzword du jour in the next generation of CD-R products from JVC, Sony, and others.

With the growing number of problems that dealers are finding with Iomega Jaz drives and the recent cuts in prices for Terabyte PhaseWriter (PD) drives (as low as US\$399), I expect that technology to stand a little of Jaz's thunder in the year(s) before DVD recorders finally hit the market.

Windows 97 betas will undoubtedly appear well before the final product's predicted third-quarter release. Thank goodness for products like Power Quest's Partition Magic 3.0 that can convert FAT16 partitions to FAT32 and vice versa. Despite the reports that Microsoft has decided to release both FAT16 and FAT32 versions of Win97, the problems and confusion caused by the FAT32-based OS/2 release of Windows 95 simply demonstrates that there will be a market for products like Partition Magic 3.0 and Norton Utilities 2.0 for Windows 95.

I'm not sure that 1997 will prove to be the year that we see the benefits of the new ACPI (Advanced Configuration and Power Interface) Version 1.0 spec introduced in January by Intel, Microsoft and Toshiba. Nevertheless, the "Instant On" concept has an obvious appeal to both desktop and notebook users and ACPI-compliant products should be a hit. (More info on ACPI is available at <http://www.intel.com/acpi>.)

While I'm still surprised how many people chose to stay with Windows 3.x, given the limiting decline in RAM and hard disk prices during 1996, I still harbor a glimmer of hope that PC users will realize that their computers don't have to be as trouble-prone as they appear under Windows 3.x. It would be my guess that many of these people would jump if they could find someone to install their upgrade(s) without charging an arm and a leg.

Office 97, which should be out by the time you read this, will very likely be a successful product, and not just because Corel's Office Suite war efforts (and the Lotus boarders) have lost some of their early steam.

I happen to like the way Office 97 works, (by going to the Compaq FTP site and downloading a "DOC" file with Internet Explorer 3.0 to see some pretty impressive "DocObject" behavior), and I think others will, too—at least those who aren't "sickening with DOCs."

Please don't take this as an opinion on the relative merits of the Office titles. I've had one of my relatives tell me recently about memo-reverts currently underway at their office in which employees anonymously identified and used WordPerfect Office products rather than the administrator-installed Microsoft Office "standards."

NT

Closer to the end of the year — and I'm betting on a 1997 "Preview" of a '98 release — Windows NT 5.0 will start showing up, primarily on networked corporate desktops, but also as the OS of choice for a growing number of graphics professionals who are likely to find NT's support for multiple CPUs well-suited to the demands of graphics and multimedia tasks. Now that Motorola and IBM have backed away from their early support of running Windows NT 5.0 on the Common Hardware Reference Platform (aka a PowerPC Platform), there may be a few Mac graphics shops that consider packing their bags and moving on, too. Ditto for those who are probably realizing that, despite its architectural merits, OS/2 Warp is always going to be a little too far removed from the mainstream to be less of a struggle. I expect to see maybe one more point upgrade before Warp goes into maintenance mode.

Of course, I'd love to be wrong. To run a desktop, Microsoft needs someone breaking down its neck to spur it on. And despite Apple's two 7-megabyte announcements that a future Mac G5 will run on Intel PCs, (not to mention the OS and the dream of a Java-based super OS that isn't pig-slow), OS/2 has been the closest thing to a serious competitor to Windows in the last few years.

Among slow-moving corporate adopters, the robust NT 4.0+ service packs alternative is likely to make a growing dent in the IS departments of companies that previously would have been well-served by Novell's NetWare. As device drivers become less of a problem and internet-based workgroup environments become more common, moving to NT 4.0 (or beyond) won't seem like such a bleeding-edge step.

It's probably safe to say that NT will still be more popular on Intel (and compatible) platforms than Alpha chips, despite the fact that the Alpha systems have consistently outperformed high-end Intel boxes, running about twice as fast for the same money. The NT market — indeed the 32-bit PC market in general — has proven to be remarkably unresponsive. So, look for OS strategies to come to this reality.

Utilities

People will continue downloading enough software over the coming year to touch up their system configurations more than a few times. Thus, the category of often-dubious "fix-it" software that includes CyberMedia's FirstAid 97, Norton Utilities 2.0 and so on, will continue to top the bestseller lists.

Portables

I also think that notebooks are due for their biggest year over (note) Windows CE devices, which are fading. I'd put my money on lightweight Pentium-based units (preferably with MMX technology) with a built-in CD-ROM, 16MB of RAM, a 2GB+ drive, 256KB Level 2 cache and an 800 to 600 screen/matrix screen, running Windows 95. Notebook users, who nearly all want to surf the 'Net, will also be prime candidates for the full-duplex audio capability that is the latest

Hot:	Hot:
MMX	Software-based audio/telephony, half-duplex audio
"Pocket Writing" CD-R	Jaz drives, 120MB floppies
Windows 97/Office 97	Windows CE
Instant On	Circle modems/ISDN
AT&T Utility software	Warp MacOS
PCs at Web servers	Fast customer relations
Installation services	Notebooks without 100MHz screens
Lightweight notebooks with CD-ROM	More on Web servers

hardware in desktop sound cards as well. The price-point for such units is certain to drop well below the \$3,500 and up they currently cost. And so they should.

Of course, just because certain industry analysts don't see a growing market for this-or-that technology doesn't mean that you can't make money from it.

In this business, focus is all-important and, as the vendors out there still selling and servicing niche products will attest, it doesn't really matter what you pick as your niche (in fact, picking a non-mainstream market segment is often a decided advantage!), as long as you are completely committed to it.

It's the Field of Dreams Principle: if you build it, they will come.

Next time: the Automobile Industry as a metaphor. ☐

Graham Bennett is managing editor at The Computer Paper, and is a former computer teacher. Based in Vancouver, he can be reached at grbennet@cp.ca.

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How to host a seminar — successfully

by Cathy Cowan



It seems that almost everybody these days is hosting some kind of seminar — Internet seminars, networking seminars, how-to hold a seminar seminars. And why not? Seminars are an excellent way to promote your company while meeting with prospective and existing clients. However, unless seminars are very carefully planned they can be very expensive and not necessarily profitable.

Below are a few pointers on how to plan a successful seminar.

"Consider the old adage: WIIFM — What's In It For Me?"

• Make it educational, not promotional.

Your customers can get a sales pitch any time. If you want to get your targeted contacts to attend your event you have to remember the old adage, WIIFM — What's In It For Me?

Offer your customers market information, a new perspective, or a training program — something that will help them in their day-to-day business. Only a very few companies with allegedly "hot" or new technologies can hold a seminar devoted only to selling their products and expect anyone other than their sales people to show up.

• Select good speakers.

Well-known keynote speakers, such as authors or prominent executives, can be a good drawing card although they can be cost-prohibitive depending on your budget.

An alternative is to host a "how-to" seminar (For example, "How To Protect Your Company On The Internet" or "How To Create A Virtual Office") with presentations by industry experts, your company and your partners. Regardless of who you choose to speak at your seminar, they should be articulate and enthusiastic. Interesting slides and support materials will also help to keep the audience's attention.

• Who should you invite?

A seminar provides an excellent opportunity to "warm and dine" contacts on your internal database. Prospective clients will be more open to attending an educational seminar than sitting through a straight sales pitch. It's also a good opportunity to make some new contacts by purchasing qualified lists of names from a reputable source like a local trade publication.

• Give out information kits.

At the end of the seminar give attendees information kits including market trend information, product information and relevant

invitations with your message printed inside will definitely get your point across. If you're sending out a mass mailing/flying to a large database you will want to have your invitations specially designed. Use the opportunity and turn the mailing into an invitation to read and react incorporating both seminar invitation and product information. This way everyone who receives your invitation gets your main messages even if they can't attend your seminar.

And don't forget to mention any door prizes you may be offering.

• Invite the media.

If you don't already have relationships established with local and trade media your seminar provides an excellent opportunity to start. Send invitations to journalists who are interested in your seminar's topic — and don't forget to follow up with a phone call.

• Follow up with your attendees.

Ask your attendees to fill out a questionnaire (perhaps as part of the drive) providing feedback about the event — so you know where to improve for the next one. Ask for comments about their purchasing needs to determine if your salespeople should call them tomorrow or next month.

"Prospective clients will be more open to attending an educational seminar than sitting through a straight sales pitch."

you can offer widely desirable products or services. Offer products from your own inventory to further promote company and your partners.

• Customize your invitations.

Invitations can be the most expensive component of your seminar — but they don't have to be. If you're hosting a small go-together for existing clients, "stock" or pre-printed

The ultimate success and profitability of the seminar will depend on the success of identifying and following up on the generated leads. □

Cathy Cowan is a consultant with the advanced technology division of Commercial Communications/Shorebrook Canada — a full service public relations firm with offices across Canada.



from NewsBytes

Korea's KD Telecom develops car-tracking

(NR) — Are you afraid of having your car stolen? A new paging system from KD Telecom, Inc. (KDT), a unit of the Korea Group is designed to help.

KD Telecom said it has successfully developed an anti-theft car system through the application of the current paging service system. In KDT's anti-theft car system, a specially manufactured

paper is secretly installed in an obvious place inside or outside the automobile.

In case the car is stolen, all the car owner has to do is call the vehicle pager by telephone or remote-control.

The vehicle pager will then send out information on the stolen car's number, color and type by wireless transmission to nearby police stations, making the car easily detectable. In a recent field test, which was conducted jointly with the police in North Cholla Province in November, the KDT system successfully recovered all the cars stolen.

"Compared with satellite systems commercialized in the United States and Hong Kong, KDT's system is far more cost-effective in that it uses the existing paging service network," said a company spokesperson.

The company is applying for a patent for the new anti-theft paging system in the U.S.

Meanwhile, Si Corp. is also planning to launch a commercial automobile-tracking service in the second half of 1997, which is intended to swiftly remove stolen cars through wireless communication technology. Si Corp.'s tracking system is composed of a control station, small-size car ser-

"automobile SOS service" to its paying subscribers. The user is required to install a pager inside his or her car, along with a special sound sensor. The sensor, which will be set off by the pager's vibrations, will make the stolen car easily distinguishable on the road.



vice and multi-wave locator, which will allow stolen cars to send out strong, electric radio waves in order to make their easily detectable.

Korea Mobile Telecom (KMT) and Namy Mobile Telecom are currently offering an

According to police figures, car theft is becoming an increasingly serious crime in 1995, about 37,000, or one per cent, of Korea's 3.7 million passenger cars were stolen and only 30,000 returned, with the rest, some 30,000 cars, still missing.

Matsushita develops LS-120 external disk drive

(NR) — Matsushita Electric Industrial Co. has announced the development of an external disk drive that supports both conventional floppy disks and the recently developed LS-120 disks.

The drive is designed to connect to a notebook computer via its PCMCIA port. It supports both the DOS/7 and PC-98 hardware systems used by IBM-compatible and NEC computers respectively.

The LS-120 system offers 120MB of storage space on a read/writable diskette. The drives are backward compatible and accept conventional 1.44MB floppy disks, making the system an attractive option for PC manufacturers and users because both systems are built into one drive.



It was developed by Japan's Matsushita-Korokuda Electronics Industries, Compug Computer, OR Technology, and 3M. The latter recently spun off its information and imaging divisions into a new company, Imation Corp., which took over the disk system business.

The new drive is priced at US\$145 and will be available in Japan, as of Feb. 26, 97.

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1996 HomeTax is available

(NB) — The Mississauga, Ontario-based HomeTax, a unit of The Learning Co. Inc., has announced the 1996 Ready-To-File version of its Canadian income tax software is ready.

Brian Cassella, HomeTax, comes with a new conversion module this year to let users export personal data from last year's electronic return to this year's. It also comes with 100 hours of free Internet access, via the Synapse service, and better print resolution. Using the Internet, users can upgrade to the Deluxe Edition, the vendor said. For more information on HomeTax, see <http://www.hometax.com/~hometax>.



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Samtack Computer launches graphics/video accelerator

(NB) — Samtack Computer Inc. of Markham, Ont., has announced the MegaVision 3D PT-5403 graphics/video accelerator. Designed for high-end personal computers, the PT-5403 can output video to a television screen using PAL or NTSC (North American television Standards Committee) video standards. Its power management unit supports VESA

Display Power Management Signaling, the vendor said.

Samtack's subsidiary, Fine Technology Ltd., manufactures the accelerator card. Both companies are Canadian-owned business units of the Fine Technology Group. The suggested retail price is \$92.

Samtack is at (905) 940-1880.

Mitsumi Electronics Corp. announces 16X CD-ROM

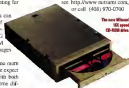
Mitsumi Electronics Corp., a manufacturer of CD-ROM and CD-R drives has announced a new 16X (sixteen times) CD-ROM drive with an Enhanced IDE (ATAPI) interface, for a price of US\$240. "The demands on CD-ROM drives continue to increase as software applications grow larger and larger, according to Jim McCaffrey, vice-president of sales and marketing for Mitsumi.

"New software applications can typically require the transfer of 50MB to 100MB of data. CD-ROM games have enormous MPEG movie files to stream, and CD-ROM databases like telephone white pages require fast searching capabilities.

"The Mitsumi 16X drive means no more waiting for software. At the press we expect this product will be very popular with both OEMs looking to give themselves some dif-

ferentiation as well as consumers who want cutting edge performance from their multimedia systems."

The drive is an internal, half-height 5.25-inch form factor, which can be mounted either vertically or horizontally in a PC. It comes with a one-year manufacturer's limited warranty. For more information on the products, see <http://www.mitsumi.com>, or call (408) 970-0700.



The new Mitsumi 16X speed CD-ROM drive.

Microsoft unveils beta Internet Explorer script debugger

(NB) — Microsoft Corp. is shipping beta test copies of a script debugger for Internet Explorer. The package is a Web page debugger for Script Group and VBScript (Visual Basic). According to Microsoft, the software will make life easier for Web authors to edit and debug scripted Hypertext Markup Language (HTML) pages from Microsoft Internet

Explorer. Known officially as the Script Debugger for Microsoft Internet Explorer, the package is billed as providing a debugging environment that integrates with the latest version of Internet Explorer and allows Web page authors to browse, edit and debug scripts on HTML pages. The software is at <http://www.microsoft.com/webhelp/prog/script32/>.

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Open Text extends its Web search technology in the latest version of LiveLink

(NB) — Open Text Corp. is now readying new technology to extend the capabilities of its open text search engine, a product sold on a stand-alone basis, as well as being fully integrated into the company's Web-based document management software for the first time in the latest edition of LiveLink.

Open Text Corp. originally produced the Open Text search engine only, noted David Weinberger, vice-president of strategic marketing. Because the search engine was able to understand SGML (standard generalized mark-up language), most of its initial applications were in the specialized areas of SGML, a precursor to HTML (hypertext mark-up language).

In late 1995, Open Text purchased Odette, maker of LiveLink, a document management software product originally based on SGML and used primarily in the oil, utilities, and pharmaceutical industries.

ServiceWorks Distribution Introduces Express line

ServiceWorks Distribution Inc. has introduced the DataTran Express 100/120 multi-media notebook line:



The system features a 10.4-inch or 12.3-inch active-matrix color screen, a Pentium 100/133MHz processor, interchangeable storage for 3.5-inch disk drives or CD-ROMs, internal data transfer, built-in microphone, external plug-ins for modem, speaker, microphone and docking capabilities, and a lithium battery option. The notebooks include a 1.4MB hard drive, a standard 16MB of EDO RAM (upgradable to 128MB RAM, 256KB of page burst SRAM cache, 16-bit stereo and an OPL1PM synthesizer). Estimated street price is less than \$5,000.

ServiceWorks Distribution Inc. is at (904) 273-4453.

According to Weinberger, the latest edition, LiveLink Internet Site 7, adds at least a dozen new features in the areas of search workflow; project collaboration, and the LiveLink library. Taken together, the new features are aimed at giving LiveLink (notwithstanding support for "mission-critical, mainstream" collaborative applications in Fortune 500 corporations, and allowing end users to perform most tasks by themselves, without assistance from an administrator, he said.

Open Text's new search engine, also in

the version 7 level and fully integrated into LiveLink 7 for the first time, adds the ability to search at three levels: LiveLink documents, and documents on the corporate network and Web. To promote project teamwork, end users can now create project pages "in a single click, without the help of an administrator," as well as to be alerted through E-mail of key events such as new messages or task modifications. More information about LiveLink is available on the Web at <http://www.opentext.com/liveLink>. □

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Are you working the Web?

by Mary LeBlanc



We're living in the age of information. There's no doubt about that.

The Internet and the World Wide Web in particular, give us information at our fingertips. It's there for the asking. But is anyone in the business world actually making for it?

Look at the environment we're working in. Today's business principles are fundamentally the same as ever. To succeed in business, you have to develop products and/or services, sell them, and then take care of your customers to ensure satisfaction and attract repeat business.

There's nothing new about that, but what has been added to the mix is the over-hyped Internet.

Many businesses have been lured onto the 'Net with promises of greater reach for business, a larger customer base and more

business. For larger companies, the 'Net promised to streamline operations and make life simpler.

But the Internet is not yet living up to all these promises. There are a few examples of corporations using the 'Net and

experts in Internet business solutions, there is a huge opportunity for resellers and VARs to establish themselves as key players. Companies are looking for someone to give them a hand when it comes to making the Web a place of business. They are investing a lot of money into the technology. Smart resellers will plan today to become the experts of tomorrow — and reap a few of the rewards.

There are several ways to do this. Begin by getting educated on the technology. Many vendors have certification programs to teach the nuances of the products. Becoming certified also helps prove to your customers that you have the confidence of the vendor and you do, indeed, know what you're doing.

It is also a good idea to look into partnership programs. Build an alliance with the vendor by becoming one of the premier resellers or VARs they deal with. Not only is this a good way to build your business and establish yourself as an Internet expert, but many vendors will also work with you to promote your business.

Finally, make sure you are using the technology yourself. Become a champion of your own products and services. Don't just sell boxes or talk in euphemisms about "implementing a great business solution."

Do it.
Understand it.
Operate your own business on the Web.

There is money to be made in this brave new world of the Internet. We are just in the early stages. So get out there and "Work the Web." ■

Mary LeBlanc is a Canadian product manager for Lotus Development Canada. She is based in Montreal.

"Companies are looking for someone to give them a hand when it comes to making the Web a place of business."

direct contact with customers. The Internet was going to make businesses more competitive — researcher — on the Internet, so one knows your firm consists of one person operating out of a

the World Wide Web study, but for the most part we're seeing Web surfers searching for their name on the Internet or people sending E-mail to their friends across the country.

Until recently, this was really all you could do on the Internet. The biggest problem was the technology. It just wasn't able to do what everyone thought it should do — enable business applications. On top of that, there were very few experts who knew how to take advantage of the technology that did exist.

The technology barrier is now being broken down with products that allow for true business applications. Software is available for developing a wide range of business solutions for the Internet and intranets. It's now possible for Web developers to rapidly develop applications that deliver personalized content based on the user's identity and preferences. Some software can also provide features for collaboration, extend the reach of legacy and CRM systems, and, streamline and automate daily business activities with workflow processes. Security and integration are no more the rule than the exception today.

That's all good news. But there remains a barrier where the human element is concerned. Because there are still so few

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Larry Eichen has new job

Larry Eichen, president of Ingram Micro Canada, has been appointed to president of Ingram Micro Asia-Pacific, and is relocating to Hong Kong.

In this new position, Eichen will be responsible for developing strategies to expand Ingram Micro's Asia-Pacific presence, including building relationships with vendor and customer partners as well as strategic acquisitions, says the company.

In a statement, Ingram Micro Inc. president and worldwide COO, said: "Larry is one of our most talented executives. For the past eight years, he has been the driving force behind Ingram Micro's growth strategy in Canada. Under his leadership we gained the number one market share in Canada in 1995. Larry is the perfect candidate to lead our Asia-Pacific operations."

In a separate management, the company appointed David Rutledge to president of Ingram Micro Latin America, with continuing responsibilities over the company's Export Division. Rutledge was previously responsible for the company's Asia-Pacific operations as well as Latin America and the Export Division.

Ingram Micro Canada will be conducting a search for a new president. In the interim, Rutledge will serve as acting president of the company.

jetForm CEO is now a director for FrontLine Technology

FrontLine Technology Partners Inc. of Vancouver, has named John Kelly as a director. He is president and CEO of Ontario's JetForm Corp., a software vendor in the electronic forms and administrative workflow industry.



In a statement, FrontLine's CEO Jim Yates said: "John's successful entrepreneurial and management experience is a welcome asset to our organization as we transition to the next step of our development."

Kelly has held positions with DVS Communications, Computer Innovation

Distribution Inc., Nahu Network Corp. and SHL SystemsHouse Ltd. He is a board member of the Canadian Advanced Technology Association, Fulcrum Technologies Inc., Avastail International Inc., Operations Online Inc. and JetForm Corp.

Informix adds new manager

Informix Software (Canada) Inc. in Ottawa has appointed Susan Currie as business development manager, Public Sector and Health Care.



Currie is responsible for meeting customer business and technology requirements and implementing marketing strategies, across Canada, the company says.

Currie was most recently regional manager, Customer Group Canada. She has held various sales, marketing and senior management positions with Incovert Security Program Redesign, Verity Inc., Oracle Corp. of Canada Inc., Aerco Canada Inc. and Digital Equipment of Canada Ltd.

Maire Kushner goes to Xerox

Xerox Canada Ltd. has appointed Maire Kushner to the position of manager, channel sales, desktop products group. She will be responsible for channel marketing and sales activities in Canada. Kushner is the former general manager of Kaskin Inc. Canada.

Fulcrum CFD resigns post

(NB) — Peter Reid, chief financial officer of Fulcrum Technologies Inc., has resigned. The company said Reid will stay in his job until a replacement is found, and will continue on Fulcrum's board of directors after that.

A company spokesperson said Reid intends to become more involved in charity work and in high-tech consulting.

PictureTel picks president

(NB) — PictureTel Corp. has promoted Don LaCava to the position of president and chief operating officer. LaCava will continue to report to Dr. Norman E. Goss, who will remain chairman and chief executive officer of PictureTel.

LaCava reportedly joined PictureTel in 1993 as vice-president of its new Personal Systems Division. In 1995, he was promoted to vice president of the newly created Enterprise Systems Group, which combined PictureTel's Group Systems Division and Operations organizations with the desktop business he had built. ■

CALENDAR

Feb. 14-18 Computer Post '97
Toronto
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Feb. 18 Computer Plus Market
Toronto
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March 2-4 Object World East
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March 10-14 Software '97
San Francisco
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April 8-10 The 8th Annual Home Office Show
Toronto
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April 15-17 ISC's Database & Client/Server World And ISC's Data Warehouse World
Toronto
Call: (566) 470-3875
Fax: (566) 470-1882

April 8 - Vancouver Nelson
April 10 - Calgary Convention '97
April 15 - Ottawa Call: (416) 621-8135
April 17 - Montreal
April 22 - Toronto

May 1-2 IAC Board of Governors
Washington
Contact: Bill Marston
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Do you have an upcoming event you'd like to see listed in CNA's Calendar? E-mail: web@cpa.ca





but no Web site

More distributors, software companies and hardware manufacturers have informational Web sites linking local dealers and their product line. Many local retail dealers have Web sites that are basically marketing brochures, giving, worse, what more information there is contained in a regular print ad.

However, a recent survey of the ads in *Canadian Computer Paper* (and its other publications, *The Computer Paper*, *Source Computer*, *Quattro Micro*, *Source Computers*, and the *Computer Player*), suggests that Web sites are starting to happen for Canadian computer retailers and distributors.

Recently, I took a look at a number of these sites. My cyber travels revealed a number of things. Almost all Internet service providers have Web pages, and 30 to 40 per cent of retailers in these publications have Web sites — depending on the target market.

Occasionally, I hit on sites where the listed address just plain didn't work. Many sites have counters, which suggest that they are not well trafficked — with as few as two thousand hits in six months.

The next step up in complexity are Web sites with quoting systems. These are often E-mail front ends, that require a business operator to come back to the customer with a quote. Occasionally, they use simple databases with product pricing in them. Some locations offer a huge selection of products, and in these cases, the Web site is operating as an on-line catalogue.

The Final Frontier — Buying Something

The final step in the sales process is obviously making the sale and delivering the product to the customer. In my travels, I did not find many Web site systems that offered an actual selling mechanism to buy computers on-line.

I believe that full-fledged on-line shopping sites are slow to materialize

because making the sale is obviously the most complicated to do. It requires a financial investment by the reseller, or their largest service provider, to set up the back-end, complete with secure credit card processing, invoicing and shipping set-up, and this system has to be integrated into the reseller's existing operations. There is still much work to do here. From the consumer side, there is still much uncertainty about putting credit cards out into cyberspace, though this will no doubt change over time. In physical space, computer retailing is about location, inventory, pricing, and service. If all this talk about Internet shopping is going to come true, a couple of the elements of that formula are going to be impacted. Service will still be a big factor, because computers, by their nature, remain complex to setup, configure and maintain. This is why I believe there will continue to

consumers either orders and wants or moves on. With the Internet, there is no physical justification. The consumer is required to wait for the product to arrive by courier.

The cyber reseller has more options than. The on-line reseller can make the consumer's order and have it drop-shipped from the supplier. The entire formula seems to look much more like a mail-order operation. Setting up efficient shipping arrangements and having good credit terms with suppliers will mean the difference between success and failure here.

Building Traffic And Loyalty

On-line shopping will still require retailers to get customers to their sites. The first, since there will have no opportunity to build loyalty, if they can deliver product reliably. Once numerous stores are available on-line, the lowest price will become an important factor, as cyber shoppers click from store to store, looking for the best deal.

The Internet also makes communications between customers easier, so retailers who don't handle complaints effectively, run the risk of having their name smeared in newsgroups, or on individuals' home pages. A quick search on AltaVista with the name of a company will bring up listing of potential problem areas.

Cyber-Shopping Still Inefficient

Before buying decisions can be reduced to a question of price, the search work of the Web will have to improve.

Currently the Web is a mass of confusion. Instead of bringing pooled information it seems to have brought perfect chaos. Clicking through the corridors of cyberspace can be as tedious as fighting cross-town traffic. ■

Doug Alder is Publisher of Canadian Computer Weekender. He can be reached at publisher@ccp.ca

"With all these pieces in place, 1998 could shape up as the year on-line shopping takes off. The problem is that retail merchants who want until then run the risk that competitors will have already established an on-line customer base that is hard to crack. Any retailer who's not in the game by Christmas '97 will have a very difficult time gaining mind share and market share," said Scott Smith, an electronic commerce analyst at Jupiter Communications.

—*Wired Week*, Jan. 6, 1997.

be a decision for proximity to the place of purchase. As computers become simpler to manage, this factor could gradually decline in importance. At this point, however, location and service are closely linked.

Tax Break Considerations

Taxes are another issue that we already see in mail-order situations and that give an incentive for on-line shopping.

If a company buys a computer from out of province, it can often ship the local sales tax, (except in Alberta where there still is no PST). According to provincial legislation, companies are supposed to reimburse this tax and pay it themselves. Many companies and individuals do not do this, however. This savings is often offset by higher shipping charges, but it can be a factor for consumers.

Pricing and inventory are going to be big factors in the success of cyber-retailing. If a consumer goes into a store and requests a product that the store does not have, the

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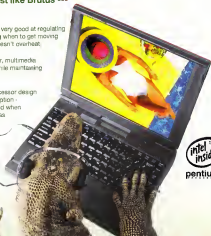
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